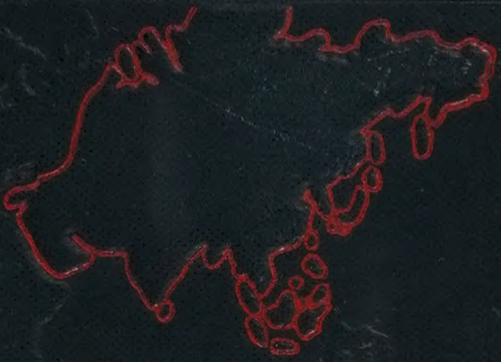

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PROFESSOR OF ECONOMIC GEOGRAPHY IN UNIVERSITY COLLEGE, LONDON.

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First Edition published October 1900;
Second Edition, September 1904;
Third Edition, February 1907.

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PREFACE.

In this Series I have tried to embody the experience of a teacher and of an examiner. This experience has led me to several conclusions, which will, I believe, be confirmed by most practical teachers who are interested in Geography as a subject of real educational value :—

1. That maps in text-books cannot generally be used directly with the text, as it is impracticable to have the book open in more than one place at a time ; but that their presence in the book has led to a regrettable neglect of the Atlas.
2. That an excessive variety of type and other mechanical devices for classification confuse the average pupil.
3. That most text-books contain much which would be better learned from the Atlas, or which is only an unnecessary tax on the memory.

Consequently, this Series contains no maps and little variety of type ; and I have intentionally avoided mentioning, *e.g.* exact heights, distances or sizes, small industries and unimportant places. Wherever any definite comparisons are made, they are intended only for reference, and not to be learnt.

Some attempt has been made in the Index to indicate the pronunciation of some names which are often accented wrongly. The spelling is based almost entirely on Mr. Chisholm's invaluable Gazetteer.

L. W. L.

CONTENTS.

PAGE

INTRODUCTORY 1

SURROUNDINGS (GENERAL) 3

„ (SEAS) 5

SURFACE (GENERAL) 9

„ (MOUNTAINS) 13

„ (RIVERS) 16

CLIMATE 21

VEGETATION 24

PEOPLE, FAUNA, MINERALS 28

POLITICAL DIVISIONS 32

ANATOLIA (ASIA MINOR) 35

THE ARABIAN PENINSULA 38

THE IRAN PLATEAU 43

INDIA 46

INDIAN ISLANDS 68

INDO-CHINA 70

THE CHINESE EMPIRE 73

KOREA 87

THE JAPANESE EMPIRE 89

ASIATIC RUSSIA 94

THE EAST INDIES 97

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ASIA.

Chapter 1. Introductory.

1. Asia has been the scene of some curious contrasts in civilisation and barbarism.

(1) On the huge northern plains the conditions of surface and climate have forbidden the growth, still more the concentration, of any dense population; and consequently they have not given the world any important civilisation or creed.

(2) The rich river valleys, on the other hand, developed in very early times the civilisations typical of tropical and semi-tropical latitudes. The Mesopotamian influence, through the narrow strip of Mediterranean coast by which it spread westward, was most widely felt; while the barriers of mountain and desert made the Hindostan influence most confined.

(3) The natural poverty of the northern lowlands, and the gradual withering of even the poor pasture-lands owing to the drying up of large areas of water in Central Asia (cf. p. 11) attracted the hordes of pastoral nomads to these rich river-valleys; and this was probably the cause, *e.g.* of the various Mongol descents on China, Russia, and even Hungary.

(4) The hot deserts of the south-west have a special interest. Compared with the cold deserts of the north, they are even less bountiful; but their requirements are also less, *e.g.* in the matter of shelter and clothing, and they are less isolated. Compared with the river-valleys,

they have a monotonous uniformity of scenery and products; but their climate is healthier, and their measures of space appear boundless.

Thus, while the multiform animal and vegetable life of the river-valleys was reproduced in their multitudinous idols, combining all shapes and kinds of life in one common figure, the three great monotheistic religions of the world are all of the desert—Sinai, Judæa, Arabia. All, too, are Semitic in origin; and all teach the great lesson of the desert—self-denial, "Thou shalt *not.*"

SURROUNDINGS.

Chapter 2. General Surroundings.

1. As Asia has more than 50,000 miles of coast, with immense differences of latitude and longitude, it is practically useless to attempt to take a comprehensive view of the whole.

(1) C. Chelyuskin is about 5350 miles from C. Romania, and the Dardanelles are nearly 6000 miles from Bering Strait.

2. Of the separate features, the peninsulas are the most remarkable.

(1) They have a curious resemblance—generally on a gigantic scale—to those of Europe. Thus, the dry tableland of Spain is reproduced in the dry tableland of Arabia; Italy, with its highland peninsula and continental Alp-encircled plain, has its counterpart in India, with its Deccan plateau and the Himalaya-encircled plain of Hindostan—Ceylon being the counterpart of Sicily; the Malay peninsula, with its Archipelago and the Sunda Islands, is not unlike the Balkan peninsula, with its Archipelago and the Ionian Islands.

So, comparison of Kamchatka and the Okhotsk Sea with Scandinavia and the Baltic—like that of the Japanese Islands and their enclosed sea with the British Isles and the North Sea—can scarcely be called far-fetched.

(2) The peninsulas comprise nearly one-fifth of the whole area of the continent; and, as they are massive and compact, they do not appreciably affect the proportion of coast-line to surface, which is less in Asia than in either of the other northern continents, though greater than in any of the southern.

3. Another important feature is the series of gulfs on the east coast.

(1) Asia had no 'Mediterranean' Sea to serve as a natural highway between her great southern peninsulas; before the opening of the Suez Canal, the Red Sea only separated desert from desert, while the Persian Gulf separated desert from almost barren mountains. The opening of the Canal has, of course, made the Red Sea much more important than it used to be, while the curse of Turkish dominion in Mesopotamia has made the Persian Gulf much less important. Cf. p. 18.

(2) The succession of archipelagoes off the east coast, on the other hand, has practically converted the Siam Gulf, China Sea, Yellow Sea, and Japanese Sea into one continuous inland sea, which has been since the earliest times the scene of a busy commerce—legitimate or otherwise.

(3) The only great drawback has been the climate. The typhoons of the southern seas and gulfs are notorious, while the Okhotsk Sea and the Kamchatkan Gulf are as much hampered by ice as the Baltic and the White Sea.

4. The numerous islands have been already referred to as forming the eastern 'shore' of this inland sea.

(1) Nearly one-twentieth of the total area of 'Asia' is comprised in these island groups; and in the south-east they form one of the most important boundaries of the continent, as the deep channel that flows between Bali and Lombok and on up the Macassar Strait is considered to separate 'Asia' from 'Australasia.' So, too, the narrow strip of the Sunda islands divides 'Indian' from 'Pacific' waters.

(2) The only Mediterranean island of any real importance is Cyprus (cf. Ceylon in the Indian Ocean), which consists of a long plain—the Mesorea—shut in on the north

and the south by mountains, which cut off moisture from the interior. The central position of Nicosia is suitable for a capital; Famagusta, though very unhealthy, might be made a good harbour; Larnaka, though only an unsheltered roadstead, monopolises the trade, exporting dates, raisins, and salt—characteristic products of a dry island.

(3) Even the smaller ones, however, help to form the remarkable series of Imperial 'footholds' by which British commerce with the East is supplied with protection, coal, and telegraph facilities. These 'footholds' extend from Cyprus—*viâ* Aden, Colombo, Singapore, the Cocos Islands, and Hong Kong—to Weiheiwei.

5. The Russian frontiers on the west and the north should be contrasted.

(1) The northern frontier, though sea, is practically useless, because it is frozen up for almost all the year; and, even when the Arctic Ocean is open, the compact land mass does not allow its climatic influences to penetrate southward as it penetrates through the broken islands along the north of Canada.

(2) On the other hand, as the land boundary between Russia and Asia presents no real obstacle to traffic, it was easy for the Russians to spread their empire eastward; and, even in the days when the Urals were the eastern boundary of Europe, their gentle slopes and comparatively insignificant height were no impediment, while their mineral wealth was a great incentive to exploration.

Chapter 3. The Seas and their Products.

1. The Red Sea is by far the most important, mainly because of the Suez Canal, but partly because of its great length compared with its breadth.

(1) In very ancient times it was a highway of commerce, connected by a canal with the Nile; but its prosperity was ruined by the discovery of the Cape route to India.

(2) The Suez Canal, which was opened in 1869, is about 100 miles long, and ships can pass through it—by the help of electric light—in less than 24 hours.

(3) The land-locked Mediterranean is, of course, practically tideless, while the Red Sea is subject to heavy and very variable tides—mainly owing to the direction and force of the winds; but the danger anticipated from this has not been realised, for the tides are dissipated over the Salt Lakes.

(4) The sandy deserts on both sides of the sea, with their intense dry heat and cloudless skies, make radiation so rapid and so complete that the changes of temperature are exceedingly trying, frost being quite common.

N.B.—Cf. Exodus xv. 8, where Moses' Song of Triumph implies that, with the low tide due to the strong east wind, the beds of the lagoons were frozen hard enough for the Hebrews to walk on.

(5) As the sea receives no rivers and almost no rain, the excessive evaporation makes it more salt than the Arabian Sea and the oceans generally.

(6) Along the shore almost the whole way from the stern treeless peninsula of Sinai—with its Jebel Horeb and Jebel Musa peaks—to the Bab-el-Mandeb, or 'Gate of Tears,' Strait there are coral deposits; and in the neighbourhood of Jedda there are valuable banks of black coral.

(7) The shells of the so-called 'Egyptian' mother-of-pearl also come from the Red Sea.

2. The Persian Gulf owes its political importance mainly to its submarine Indian cables, and its commercial importance mainly to its Great Pearl Banks.

(1) The Strait of Ormuz is only about 50 miles wide, and the gulf is nowhere more than about 50 fathoms deep;

so it would be even easier to destroy the cables than it was to lay them.

(2) The abrupt descent of the Fars and Laristan mountains—the edge of the Iran plateau—into the gulf makes the eastern waters too deep for pearl-diving, though well provided with harbours of refuge; but in the shallower western waters there is one of the most important pearl fisheries in the world, especially round the Bahrein islands.

(3) Besides the actual pearls, there is a mother-of-pearl industry; the shells are generally small, but are not as thin as the Ceylon shells.

N.B.—They were largely used in Birmingham for making buttons.

3. Pearls, mother-of-pearl, and coral are found elsewhere round the coast of Asia.

(1) The Gulf of Manar produces the best pearls in the world, Aripoo being the oldest centre. Tuticorin used to be equally important, but the disgusting filth deposited every 12 hours by the tide along the shore of the mainland is said to have been too much for the oyster.

(2) The shores of the South China Sea are famous both for pearls, especially from Labuan and the Sulu islands, and for mother-of-pearl, especially from the bays of Cochin-China; and coral is found throughout the same area, especially off Sumatra and off Samar.

(3) There are also coral banks off Japan, which may be compared with those of the Bermudas; they practically owe their existence in such a latitude to the warm Kuro-shiwo, as the Bermuda banks owe theirs to the Gulf Stream.

4. Amongst the other commercial products of these eastern seas are trepangs, cuttle-fish, sharks, turtles, and seaweed.

(1) The trepang, or bèche-de-mer, is an unsightly sea-slug, considered a great delicacy by the Chinese; it is found on the coral reefs.

(2) The cuttle-fish are caught mainly off Yezo and the other north-west islands of Japan.

(3) The chief shark-fisheries—for fins for the Chinese market—are off the Burmese coast, *e.g.* at Akyab, and off Sumatra and Borneo.

(4) The turtles, which supply the so-called '*tortoise*-shell,' are also found in the Malay waters, Singapore and Batavia being great shell markets. Cf. the Nagasaki 'tortoise-shell' industry.

(5) The seaweed, which is used for food, medicine, glue, etc., flourishes luxuriantly in the same warm waters of the Archipelago.

SURFACE.

Chapter 4. General Surface.

1. Asia is by far the largest and the highest of all the continents.

(1) It is four times as large as Europe, half as large again as Africa, and larger than North and South America put together; and it has a number of mountains 5000 or 6000 feet higher than the highest summits of the Andes.

2. The predominant feature is the extent and the height of plateau formation (cf. Africa), which divides it into four wide areas.

(1) The Western Plateau stretches from the Black Sea to the Pamirs and the Sulaiman Mountains; the Eastern Plateau stretches from the Pamirs and the Himalayas to the Tchuktchi peninsula.

(2) North-west of the whole plateau curve, from the Caspian to the Kolima, are the lowlands of Siberia and the Kirghiz Steppes; south and east of it, from the Euphrates to the Amur, are the—much more broken—lowlands of Mesopotamia, India, and China.

(3) As the breaks between these southern lowlands are again more or less barren plateau, there was very little inter-communication in early times; and therefore the various lowland peoples developed quite independently of one another, and so made very slow progress in civilisation. And, as the general watershed is still more barren and inaccessible, the northern and the southern lowlands were still more isolated from each other.

3. The Pamirs may be considered the centre of the whole system.

(1) The ranges and plateaus to the west of the Pamirs are lower than those to the east. Thus, the Karakoram Mountains exceed 28,000 feet, and the Himalayas reach 29,000, while the plateau of Tibet has an average height of fully 15,000. But the highest peak of the Elburz range is only 19,000 feet, and that of the Armenian Mountains is not much more than 17,000, while the Iran plateau is not 5000.

N.B.—Mount Hermon is only 11,000 feet, and Mount Sinai is less than 9000 feet.

(2) Another point of difference between east and west is that the eastern ranges separate as they rise, while the western draw together as they fall; the distance between the Caspian and the Mesopotamian lowlands is not 300 miles, while that between the Stanovoi and the Nanling Mountains is 3000.

4. The system regarded as a whole, however, has three features in common throughout its entire length.

(1) The face towards the northern lowlands is always steep. Thus, the Caucasus, Tian Shan, Altai, and Yablonoi Mountains form a steep continuous face to the Kirghiz and Siberian lowlands; and south of this line there is an area of relatively deep depression, the lowest parts of which are marked by the Black Sea, Kur valley, Caspian Sea, Tarim basin, Lob Nor.

(2) The central ranges—Elburz, Hindu Kush, Kwen-lun—rise steeply from this area of relative depression to a great height, from which they have a short slope on to the plateaus of Asia Minor, Iran, Tibet.

(3) The southern ranges—the Taurus, Zagros, Sulaiman, Himalaya Mountains—rise abruptly from the sea or the flood-plains of the southern lowlands to a still greater height, from which they also have a short slope on to the same plateaus of Asia Minor, Iran, and Tibet.

5. The Eastern Plateau alone occupies one-fifth of the

whole surface of Asia, and has a monotonous uniformity of scenery and climate.

(1) It may be divided into two areas by the rainless depression of Gobi, "The Great" (Desert), or Shamo, "The Sand-Sea," the northern being lower and narrower than the southern.

(2) The chief characteristics of the northern area are—broad barren valleys sloping almost imperceptibly from the lowlands to the general level of the plateau, and a series of mountain ridges running from east to west.

(3) The chief characteristics of the southern area are—the continuous stretch of Tibet, the highest plateau in the world, and the typical plateau-edge of the Himalayas, the highest mountains in the world, though the parallel range of the Karakoram Mountains has in Mount Dapsang (28,700 feet) a worthy rival of Mount Everest.

6. The Central Depression is only relatively low, and is really a lower terrace of the plateau.

(1) It is the site of an old sea, vestiges of which are still left in the rapidly-disappearing Han-hai, or Tarim marshes, and Lob Nor; and the surrounding plateaus and the border-ridges entirely prevent sufficient moisture reaching it to replenish what is lost by evaporation.

(2) It was probably the beginning of this process that caused the early migration westward of the Huns and Mongols

7. The Western Plateau is joined to the Eastern by the Hindu-Kush and its parallel chains, and may be divided into three areas—Iran, Armenia, and Asia Minor (or Anatolia).

(1) The lowest part of the Iran plateau is in the basin of the rapidly-disappearing Lake Hamun, and the highest is the 19,000 feet of Mount Demavend.

(2) The lowest part of the Armenian plateau is in the basin of the Caspian, which is also drying up; Mount Ararat rises to about 17,000 feet.

(3) The Taurus and the Pontic Mountains are typical border-ridges of the Anatolian plateau.

8. The northern lowlands lie practically to the north west of a line running from Merv through Tomsk to Verkhoyansk.

(1) S.E. of this line the land rises rapidly to the plateau, forming dry steppe, and being famous pasture-land.

(2) There is also a general slope from the N.E. down to the S.W., illustrated by the level of the various lakes, *e.g.* Lake Baikal (1550 feet), Lake Balkhash (780), Lake Aral (157 *above*), and the Caspian (85 feet *below* ocean level).

(3) Of the lowlands proper, much retains its old character of a sea-bed, and is useless in most places. The extreme north is barren tundra, merging southward into marshy forest; and only Western Siberia is fertile.

N.B.—Contrast the fertile lowlands of the S.E.—India and China.

(4) The Caspian Sea, unlike Lake Aral, is a remnant of a huge sea which once connected the Black Sea with the Arctic Ocean, and thus made Europe almost or entirely an island. It is now nearly 7000 square miles (roughly = Wales), smaller than it was 100 years ago, and this is affecting both its climate and its commercial value.

9. The structure of Asia, therefore, favours the formation of extremely long rivers, with basins of enormous area.

(1) Only the Mississippi, the Amazon, the Congo, and the Nile, have greater length or larger basins than the Ob, the Yenisei, or the Yang-tse-kiang.

(2) Both the Ob and the Yang-tse are considerably over 3000 miles long, and the Ob has an enormous basin, half a dozen times the size of France and Germany;

and the Yenisei, though not nearly so long, has almost as large a basin.

(3) Compared with these, the much more famous rivers of India seem almost small! The basin of the Ob is larger than the basins of the Ganges, Indus, and Brahmaputra put together; and its length is more than twice that of the Ganges (cf. p. 19).

10. Owing to the scarcity of rain in the interior of so huge a continent, however, and to the diversity of surface, the rivers have comparatively small volume, and most of them never reach the ocean at all.

(1) The predominant feature of the Asiatic river-system is, therefore, the enormous area of inland drainage, which covers an area much larger than Europe, and fully half the size of Africa.

(2) Next in area to the inland drainage comes that of the Arctic Ocean, which includes all the northern lowland and much of the plateau. Its predominant feature is the large proportion of *eastward and westward* navigation made possible by the fact that each of the great waterways really consists of *two* rivers of almost equal importance, *e.g.* the Ob and the Irtysh, the Yenisei and the Angara, the Lena and the Aldan.

N.B.—Cf. the eastward and westward navigation of Canada, though of course the cause is different.

(3) The same principle is found to some extent, with the same beneficial result, in the Pacific and Indian Ocean drainage areas, cf. the Amur = the Argun + the Shilka, the Ganges and the Jumna, the Indus and the Sutlej, the Euphrates and the Tigris.

Chapter 5. Mountains.

1. The alternative name for the *Pamir* ("Plateau")—*Bam-i-Dunya* ("The Roof of the World")—is most appropriate for the nucleus of the great Asiatic highlands.

(1) The extreme height is about 24,500 feet, *i.e.*, seven times as high as Snowdon; and the average height is considerably more than half this.

(2) The convergence of the three great ranges—the Himalayas, Kwen-lun, and Tian-Shan—causes the average height even to rise eastward; but, except for the Hindu-Kush, there is a sudden fall on the west to the Turkistan Deserts.

(3) In spite of the great height, the Kirghiz shepherds use the valleys as a summer pasture, and this has led to a considerable amount of cross communication; so that the region has unique political importance, Russian intrusion into it being jealously watched both by British and by Chinese statesmen.

2. The Himalayas—"Abode of Snow"—form the southern escarpment of the great central plateau (cf. p. 10), but are really a series of parallel ranges.

(1) They are curiously well defined by the upper arms of the Indus and the Brahmaputra, while almost the whole of their southern base fronts the low plain of the Ganges—nowhere more than 1,000 feet above the sea; and the edge of the plain is skirted by the Terai, a belt of wet jungle some 10 to 15 miles wide.

(2) There are two main axes, both running—like all the great ranges of the Old World—from east to west; and it is from the southern one, *i.e.*, the one seen from India, that the name—"Abode of Snow"—is derived.

(3) This southern range is really a series of mountain groups, each of which is connected with the water-parting on the north by a transverse ridge; and it is from these ridges that the Indus, Sutlej, and Brahmaputra are thrown off.

(4) The northern range is the water-parting between India and Tibet; and the climate is so much drier, owing to the obstacle offered by the southern range to the wet winds, that both the snow-line and the lowest limit of

the glaciers is very much higher—3,000 to 5,000 feet higher—than on the southern range. Cf. the high snow-line on the dry eastern mountains of Bolivia and the low snow-line on the wet western mountains of Chili.

(5) As there is practically only one pass, the Dras, of less altitude than 16,000 feet, the Himalayas are a more or less insurmountable obstacle; but India is accessible in the north-west (cf. p. 48).

3. The northern escarpment of the great central plateau is neither so high nor so clearly marked as the southern.

(1) The Tian-Shan, or "Celestial Mountains," resemble the Himalayas, however, in consisting of parallel ranges, and have checked Russian advance southward, as the Himalayas have checked British advance northward.

(2) The Altai, or "Golden Mountains," on the other hand, are so rich in gold, they slope down to the Ob basin so gradually, they have such fertile "sub-alpine" valleys, and they are so much lower than the Tian-Shan, that they are being overrun by Russian settlers.

4. The Hindu-Kush, "or Killer of Hindus," unlike the other ranges mentioned, really separates plain from plain, not plain from plateau.

(1) This, and the fact that there are several passes not much more than 12,000 feet above the sea, encouraged communication across the range from the Indus to the Amu (or Oxus) basin.

(2) On the other hand, the great height, which exceeds 23,000 feet, and the comparative nearness to the ocean, cause the snowfall to be exceptionally heavy for Central Asia; and this has been the main cause of the terrible series of disasters to mercantile caravans, from which the range derives its name.

5. The Caucasus range is within the political frontier of Europe, and is regarded—incorrectly (cf. p. 32)—as the physical division between Europe and Asia; but in character it is entirely Asiatic.

(1) It consists of parallel chains joined by a high plateau.
(2) At least half a dozen peaks are much higher than the highest summits of the Alps; but the climate is so much drier than that of the Alps that glaciers are comparatively few, and the snow line is 2000 feet higher than on Mont Blanc.
(3) The tremendous ravine of the Dariel Pass, through which there is now a fine military road, gave the Russians access (at a height of 8000 feet) to the romantic isthmus of Georgia, or Transcaucasia, across which a railway now runs, *via* the Rion-Kur Valley, from Baku to Batum.

Chapter 6. Rivers.

1. The rivers of a continent have, of course, a very close connection with its mountain systems.

(1) On the one hand, the distribution of the great land masses is practically the key to the watersheds of the continent. Thus, the huge ∠ shaped plateau of Asia must throw off rivers north-westward, southward, and eastward.
(2) On the other hand, the course of the rivers is practically the key to the general configuration of the land, for rivers always seek the "line of least resistance"; and in a dry country like Asia rivers of great volume can only be fed from snow-wrapped mountains.

2. The rivers of Asia, as we have seen, may be divided into two classes—oceanic and inland.

(1) The large proportion of inland drainage is due to two causes. The scanty fall of rain and snow does not

supply the rivers with sufficient volume to enable them to force their way to the ocean, as, *e.g.* the Congo forced its way from the old "Congo Sea" into the Atlantic; and the tendency of all the plateaus to sink saucer-like towards their centre makes surface water, as *e.g.* in Australia, gravitate naturally inland.

(2) The distribution of the oceanic areas depends on the relation of the rain-bearing winds to the "relief" of the continent; and, as the greatest height and the heaviest precipitation are both towards the south-east, the general direction of the longest rivers will be towards the north-west, *i.e.* the frozen Arctic Ocean, though the most useful will flow to the ever-open Indian and Pacific Oceans.

3. The most important areas of inland drainage are round the Aral Sea, the Tarim basin, and the Seistan marsh, and the most interesting is the Jordan valley.

(1) The chief interest of the Aral Lake or Sea, which is nearly as large as Scotland, is that it is fed by rivers—the Syr and the Amu (Jaxartes and Oxus)—which used to empty into the Caspian. Even as it is, the lake is slowly drying up, the evaporation and filtration in a sandy region of such intense dry heat being much greater than the inflow. Cf. p. 92.

(2) Lob Nor, the centre of the Tarim basin, unlike the Aral, contains fresh water, which can only be accounted for by supposing that it is of very recent formation; the old outlet of the Tarim system must have been filled up by wind-blown sand, and the new one has not had time yet to become—like the Aral—brackish.

(3) The Seistan swamp—like Lob Nor, but unlike the Aral—is the lowest part of the plateau on which it stands; and, therefore, it naturally collects the water of all the neighbouring rivers. But it is a very ignominious grave for the mighty glacier-fed Halmand river.

(4) The Dead Sea is nearly *1300 feet below* the level of the Mediterranean, and is about eight times as salt as ordinary sea water; indeed, its specific gravity is so great that it is almost impossible for a bather to sink in it. The shore is marked by bold cliffs on the east and the west, but by mud flats on the north and the south. It is the lowest part of a huge rift that runs from Mount Lebanon, *viâ* the Akaba Gulf, down the east of Africa, and contains some of the great African lakes, *e.g.* Tanganyika.

4. The Arctic drainage, as in Canada, has almost no importance except for local summer trade.

(1) The worst feature of it is that the rivers drain from a warmer into a colder climate, and their lower courses are still frozen while grain is ripening along their upper reaches. The result is that the melted snow and ice from the latter, being stopped by the ice farther north, flood the country for miles, converting it into one continuous tundra or frozen marsh.

(2) The facilities for local traffic, especially in the granary of Western Siberia, are, however, very great; and the water-power, especially in Eastern Siberia, will some day be very valuable in the development of the mineral wealth.

5. The drainage into the Indian Ocean is much better known, though really less important, than that into the Pacific.

(1) The Mesopotamian drainage is at present quite unimportant, though it once watered a "Garden of Eden." In ancient times, canals and embankments regulated the annual inundations in the same way and with the same beneficial result as is still seen along the Nile in Egypt; but, under the curse of Turkish dominion, the Syrian desert has been allowed to

absorb the Euphrates, and the Tigris—"the Swift"—to choke itself up with mud.

(2) The Indus falls from such a great height, and has such a narrow valley, that its pace would be too fast for easy navigation even if it did not bring down immense quantities of mud to choke up its bed; but this mud litters its channel with islands and sandbanks, while the terrific heat of the Thar is causing very rapid evaporation. The Punjab—"Five Rivers" owes its fertility, however, to the irrigation canals from the Indus and its four great tributaries. Cf. pp. 50, 57.

(3) The peculiar sanctity of the Ganges is, no doubt, due to the unique value of the river to the people. Necessary water for domestic uses and irrigation, fertilising mud for "top-dressing," transport for men and goods, never fail. Consequently, every inch of "Mother Ganga" is holy; to bathe in her waters will wash away all sin and cure all diseases, and to be buried on her banks ensures eternal bliss—though the disease-laden waters cause a good deal of unnecessary pestilence.

N.B.—For the Brahmaputra, "the Son of Brahm," and the Irawadi, "the Elephant River," see p. 51.

6. The Pacific drainage includes the teeming deltas of the south-east, the great plain of China, and the important political artery of the Amur ("The Great" River).

(1) The importance of the Me Nam and Me Kong is mainly due to the fact that, besides the facilities for navigation, their water and silt are a source of inexhaustible fertility in a climate which—for tropical swamps—is extraordinarily healthy. Cf. pp. 70 and 72.

(2) The Yang-tse-Kiang, or Blue River, collects its waters from many tributaries spread over a wide area, so that the violence of floods is minimised; its lower course is fringed by lakes, which further moderate the floods; it is navigable for ocean steamers for nearly 700 miles—up to Hankow, and for smaller steamers up to

Ichang or even Chung-King (cf. p. 75); it teems with fish; its fertile banks are crowded by the densest population in the world; it is longer than the Amazon, and its basin is larger than the basins of the Ganges and the Brahmaputra combined.

(3) The Hwangho, or Yellow River, presents the greatest possible contrast to all this, being a shallow dangerous torrent, which has well earned its name of "China's Sorrow." Cf. p. 75.

(4) The eastward course of the Amur has made it the natural line for Russian advance towards the Pacific. Its upper course is the "line of least resistance" across the Khingan mountains, and the valley of its Ussuri tributary commands Vladivostok; but the lower—northward—course is ruined by a bad bar, shifting sands, intricate channels, and the length of time for which it is ice-bound (about half the year).

CLIMATE AND PRODUCTIONS.

Chapter 7. Climate.

1. The size of Asia is so great, and its surface is so varied, that there must be great variety of climate.

(1) The three main causes which determine it, are heat, moisture, and wind.

(2) The heat depends on the latitude, the slope of the land, the height, and shelter.

(3) The moisture depends on the distance from large areas of water, and the direction of the prevailing wind.

2. The word *climate* means "slope," and the slope has a great effect on what we call climate.

(1) The heat of the sun's rays varies with the angle at which they fall upon the earth—a direct ray being warmer than an indirect one, both because it covers less ground, and because it comes through less atmosphere.

(2) The slope also affects the amount of moisture, for it is the chief cause of the precipitation of rain. Thus, the warm, wet winds from the Arabian Sea pass over the dead level of Rajputana with so little precipitation that they leave the Thar Desert; but they deposit every year fully 50,000 tons of water on every acre of the Punjab slopes *after crossing the desert.*

(3) The fact that Asia is entirely north of the Equator causes its northern slopes to be always sloping away from the sun; and, as the general slope of more than half the continent is more or less northward, the actual sun heat over that portion must be materially modified.

3. The length of the day, however, like the actual sun heat, varies with the latitude; and quantity compensates for quality.

(1) The difference between the longest and the shortest day in the year is practically imperceptible in the extreme south, while it is more than twelve hours in the extreme north. For instance, at Tobolsk and Yeniseisk there are about eighteen hours of daylight at midsummer, and at Verkhoyansk there are twenty.

(2) This long duration of sunlight leaves very little time for radiation of heat, and thus makes it possible to ripen even wheat as far north as Tobolsk. Of course, the midwinter night is correspondingly long, but snow helps to lessen the darkness and to keep the soil warm.

(3) The earth is so small, and therefore is moving so slowly, in high latitudes that the land there passes very slowly from under the sun's rays; and this makes the ripening very continuous and very complete. For instance, a degree of longitude measures only about thirty miles near Verkhoyansk, but about sixty near Delhi.

4. Over such a huge continent, the climate must be generally "continental," *i.e.* one of great extremes—extremes of cold in the north and heat in the south.

(1) Where there is the greatest difference in the length of the day, there are also usually the greatest extremes of summer and winter climate; thus, the difference between the average summer and winter temperature is *120°* at Verkhoyansk, but only 5° at Point de Galle.

(2) At Verkhoyansk there is a "pole of cold," the average temperature of January being —60° F., a degree of cold unknown even in Polar regions; and the powerfully developed area of high atmospheric pressure thus caused results in winds outflowing in all directions from Verkhoyansk. This accounts for the very dry N.W., N., N.E. winds experienced in winter over all the outlying parts of the continent.

(3) West of Khalat there is a somewhat corresponding centre of great heat, where the average July temperature is over 95° F.; and the area of low pressure thus caused results in the inflowing of very wet Monsoons.

5. The general "continental" character of the climate is further accentuated or modified by the presence or absence of mountains and seas.

(1) Owing to the absence of mountains across the tundra from east to west, there is no obstacle to the passage of icy winds southward; and this causes the summer frosts of Siberia and the intensely cold winters even of places in the latitude of Naples, *e.g.* Peking.

(2) The obstacle of the great southern escarpment of the Central Plateau entirely prevents the warm rain-laden winds from the Indian Ocean reaching the thirsty deserts of Tibet and Turkistan.

(3) The extremities of the south-eastern peninsulas, in addition to the usual advantages of a "marine" climate, are near enough to the Equator to have a double rainy season; while the peninsular conditions of Kamchatka give Petropaulovski a milder winter than Peking, as the insular conditions of Japan give Tokyo a cooler summer than Irkutsk.

N.B.—Both Kamchatka and Japan have also, however, the advantage of the warm Kuro Shiwo, or Black Stream; and Behring Strait is too narrow and too shallow to allow many icebergs to gravitate southward to lower the temperature.

6. The whole continent may, therefore, be divided into seven climatic areas:

(1) The Arctic cold dry area, *i.e.* the tundra or Frozen Desert, which includes the estuaries of the three great Siberian rivers.

(2) The Siberian area, which is one of great extremes except in Kamchatka, the extremes increasing naturally with the increase of height towards the east and the south-east. Thus, Tobolsk has a warmer

winter and a cooler summer than Yeniseisk, and Yeniseisk than Yakutsk.

(3) The Monsoon area, which in the more northerly latitudes—where there are no winter rains—*e.g.* China, has a comparatively cold winter; and in which the change of monsoon is accompanied by furious storms—"cyclones" in the Indian Ocean, and "typhoons" farther eastward.

N.B.—Cf. the hurricanes in the West Indies in August and September, *i.e.* when, in addition to great heat and great moisture, there are periods of calm air.

(4) The intermediate area of the Central Plateau, which is excessively dry,—for even the dry north winds are further dried in climbing the northern escarpment [cf. § 5 (2)] above—and has great extremes, but on which the height prevents the summer ever being so depressingly hot as it is, *e.g.* in the Aral-Caspian lowlands.

(5) The Mediterranean area, where latitude and the peninsular conditions give Asia Minor an exceptionally good climate.

(6) The hot deserts of the southern peninsulas, which may be regarded as a continuation of the Sahara.

(7) The insular climate of the islands, which varies with the latitude.

N.B.—Owing to the enormous area, the average winter temperature—except on the south and the south-west coasts—is lower, and the average summer temperature—except on the north and the north-east coasts—is higher than in the same latitudes elsewhere.

Chapter 8. Vegetation.

1. With such variety of climate, the vegetation must vary greatly; but the uniformity of surface leads to wide dispersion of typical plants over typical areas:

(1) The Arctic frozen desert or tundra.

(2) The Siberian forest area.

(3) The Steppes. (4) The Hot-deserts.
(5) The Mediterranean peninsula.
(6) The Monsoon area. (7) The East Indies.

N.B.—Of course, the dividing lines, especially between the Steppes and the Hot-deserts, and between the Monsoon area and the East Indies, are very vague.

2. The Arctic vegetation is practically limited to the shrubs, mosses, and lichens on which the reindeer feed.

(1) The summer is hot enough, partly owing to the low level, but is too short to develop the grains and roots which civilized man and his domestic animals need.
(2) The long winter and intense cold cause the soil to be permanently frozen to such a great depth that the summer sun is unable to thaw it for more than a few inches from the surface; and, therefore, no plant can be grown which has a long root, however quickly it ripens.
(3) The length of the winter and the intensity of the cold also cause the animals which do exist, to grow additional fur; and fur is the only commercial product of the region except the fossil ivory (mammoth tusks) from the mouth of the Lena.

3. The Siberian area is one of temperate forests, which afford some shelter from the north winds.

(1) To the north the trees are evergreen, especially larch; farther south they are deciduous trees, birch being the commonest.
(2) Under the shelter of these forests in the lowlands of the Ob basin, the loamy soil produces immense quantities of grain, especially wheat; but farther east the increase of height and the greater extremes of climate (cf. p. 23) militate against agriculture.
(3) These forests are also the main source of the Siberian supplies of fur.

4. Where extreme dryness and great changes of temperature cause the accumulation of sand, and are adverse to the growth of large trees, there are areas of steppe.

(1) These steppes are of two kinds—rich and poor. The rich steppes are on the borders of the forests, and provide really good pasture; the poor steppes are on the borders of the actual deserts, and are almost useless. Thus, the Turanian, Tarim, and Shamo Steppes are very poor, while those of the upper Irtysh and the Selenga basins are very rich.

(2) All the steppes practically depend for water on the snow-clad mountains behind them; and, where perennial streams cross the richer steppes, fine crops of fruit, vegetables, and grain can be raised.

(3) Except in these cultivated river-side 'oases,' the population consists of pastoral nomads.

5 The hot deserts of the south-west reproduce African features both in oasis vegetation and in typical desert plants.

(1) The hot deserts are due, as in Africa, simply to the absence or the deficiency of rain along the Tropic of Cancer, the Tropic being the centre of a belt of calms in winter, and the heat in summer tending to evaporate rather than to precipitate moisture.

N.B.—Cf. the Atacama, Kalahari, and Australian deserts along the South Tropic.

(2) The amount of sand is due partly to the enormous variation in temperature between day and night, which splits the soil up in all directions, and partly to the absence of vegetation, which would bind the surface together; and it is distributed mainly by wind. Cf. the dust-storms of Northern China.

(3) As in Africa, the deserts are not, as a rule, dead level, nor 'seas of sand,' nor entirely barren. Most of them are humpy plateau; and it is this feature which is mainly responsible for the countless subdivisions that have—more or less temporary—river systems of their own ending in salt lakes. Cf. the Shotts of the Sahara.

(4) The great length of the continent from east to west causes some part of its surface to be absorbing the sun's rays vertically in summer for six hours every day, and the absence of shade in the driest areas accentuates the evil by combining with the fierce radiation from the parched interior to produce severe droughts; but, owing to the earth's position in aphelion, the sun is 1,500,000 miles farther from Asia in the 'northern' summer than from the terrible Australian deserts in the 'southern' summer.

(5) The typical product of the oases is the date-palm, but almost any heat-loving plant can be grown.

(6) The true desert vegetation consists of plants which, by lengthening their roots or shortening their height or thickening their bark or protecting their leaves with thorns or secreting aromatic oils, have adapted themselves to draw water from great depths or to resist the evaporating power of intensely dry hot air, *e.g.* myrrh, gums, balms.

6. Asia Minor reproduces the typical plants of South Europe.

(1) The coastal regions are slightly warmer and damper than the interior, and produce olives, figs, myrtles, etc., while the interior produces wheat.

7. The Monsoon area has typical wet-jungle and flood-plain or delta vegetation.

(1) The most important grain is rice, on which literally millions of the people subsist.

(2) The most important fibre is cotton, indigo being generally grown with it for its dye.
(3) It produces nearly all the tea in the world.

8. The Tropical islands produce all the plants which require heat and moisture evenly distributed throughout the year.

(1) The sugar-cane, sago-palm, coco-nut, and bread-fruit are the most important food plants.
(2) Pepper, nutmeg, and vanilla are the most important spices.
(3) By far the most important fibre is tobacco, especially in Borneo and the Philippines.

N.B.—See under East Indies, p. 95.

Chapter 9. People, Fauna, and Minerals.

1. The distribution of people and animals corresponds fairly to the distribution of plant life.

(1) The local connection between animal and vegetable life is not nearly so close as it used to be; with the increase of civilisation, and especially with greater ease of communication, men, if not the lower animals, become less and less dependent on the particular place in which they happen to be at any particular time.

2. More than half the people in the world live in Asia, and at least five-sixths of these live in the Monsoon area.

(1) The total population of the world is estimated at about 1,500,000,000, and that of Asia alone as about 830,000,000.
(2) Of the latter, about 400,000,000 live in China Proper, and about 300,000,000 in British India.

3. About one-quarter of the population of Asia con-

sists of White Men, the rest being practically confined to the two branches of the Yellow Race.

(1) The White Men are found mainly in the south-west, and speak either Semitic or Aryan languages, *e.g.* Hebrew and Arabic or Armenian and Persian.

(2) The south-eastern Yellow men form the Tibeto-Chinese peoples; their home is the central plateau, and they speak a so-called monosyllabic language.

(3) The north-western Yellow men form the Mongol-Tatar peoples; their home is the Siberian lowlands—though they have spread to the eastern islands, *e.g.* Japan, and they speak polysyllabic languages.

4. The characteristic fauna may be classified according to climatic areas, with some reference to the population.

(1) The lack of barriers in northern Asia encouraged the wide distribution of typical animals, as of typical plants (cf. p. 24) and atmospheric conditions (cf. p. 93); but the great mountains and broad deserts formed more or less impassable obstacles.

5. Of the economic animals, the most important are the reindeer, yak, horse, camel, and elephant.

(1) The reindeer and the yak are characteristic of dry cold areas, the reindeer being a native of the lowlands and the yak of the highlands. The reindeer is the only possible transport animal on the frozen marshes of the north, and provides also milk, meat, and tent-skins; while certain kinds of sheep are the only rivals of the yak for carrying loads up and down the rocky snow-blocked gorges of the central plateau (cf. the llama in Peru).

N.B.—The reindeer—like the dog or wolf, also a native of the frozen north—gives exceedingly rich milk, which can be greatly diluted with water to compensate for the small quantity.

(2) The horse is to the steppes what the camel is to the deserts. Both wander wild in central Asia, and both are valuable milk-givers; but the horse is, of course, the more dependent on water.

N.B.—The mare—like the ass, also a native of the hot plains and plateaus—gives exceedingly thin milk.

(3) The elephant is the only possible transport-animal in tropical swamps, *i.e.* the Monsoon area; and the two chief non-economic animals, the tiger and the rhinoceros, are characteristic of the same area.

6. Almost equally important, and much more numerous, are the cattle, sheep, and goats of the nomad peoples.

(1) The Monsoon area, and the coastal regions elsewhere, are devoted to agriculture, the careful spade-cultivation of China and Japan almost justifying the use of the word horticulture; and the northern latitudes are the realm of the hunter and the fisherman. The whole of the rest of the continent is more or less devoted to pasture, and the shepherds are almost always nomads.

(2) The cattle and sheep are typical of the steppes, where they provide all the necessaries of life—milk, meat, clothes, tents, rugs, bottles (leathern), etc.; the goats are typical of still drier or more rocky regions, *e.g.* the Angora heights of Asia Minor.

(3) It is the enormous size of these steppe flocks and herds that makes the horse of so much importance to the shepherds, especially the Kirghiz. They call themselves Kazak, which is said to mean "The Horsemen"; and, certainly, without their horses, it would be impossible for them to tend and protect their vast flocks.

7. The mineral wealth is very great, especially in gold, coal, tin, oil, salt, and jewels; but its development depends, again, on the distribution of people.

(1) The gold is most abundant in the north-east, which has probably a geological connection with the Yukon region of America, and in the Urals; and, as both these areas are rich in other minerals and are under Russian dominion, there is every probability of them being properly developed. (Cf. the Trans-Siberian Railway.)

(2) The coal is most abundant in China and the eastern islands, especially in Japan, Hainan, and Sakhalin. The deposits in the Mongol-Tatar area are being well worked, especially in Japan; but China is a "Happy Hopeless Land of Eternal Stand-still."

(3) Tin is the characteristic mineral of the Malay peninsula and archipelago—as it is also of all the eastern coast of Australia down into Tasmania; and the petroleum comes from the same area, especially Burma and Sumatra, and from Caucasia.

(4) Layers of rock-salt are common, especially in India (cf. p. 56), and salt is evaporated in many places along the sea; but the climatic conditions of the interior of the continent tend to the production of salt-lakes, ending in salt deserts, wherever evaporation proceeds more quickly than precipitation.

(5) Among the precious stones, the sapphires of Ceylon, the rubies of Burma, and the jade of Turkistan are most famous now. (Cf. the diamonds of Golconda in earlier times.)

POLITICAL DIVISIONS.

Chapter 10.

1. The countries of Asia, excepting China, Japan, and Persia, are almost entirely under the rule or the influence of Britain, Russia, Turkey, or France.

(1) The Dutch own most of the East Indies. Cf. p. 95.

2. The Russian territory is much the largest, being fully six and a half million square miles.

(1) It is usually divided into three areas—Caucasia, Siberia, and Central Asia.

(2) Siberia alone is larger than Europe, but its population evenly distributed would not give even one individual to every square mile. Of its 4,500,000 inhabitants, over 3,000,000 are Russians, exiled for political or criminal offences; and they occupy the best parts of the country, especially the river-banks. The rest include some Eskimo along the coast, and Ostyaks, Yuraks, Samoyads, etc., inland.

(3) Caucasia—*i.e.* the Ponto-Caspian isthmus south of the 'Manych Depression' (from the Don to the Kuma)—contains nearly twice as many people as Siberia. The country is very beautiful, the climate good, the soil fertile, and the mineral wealth abundant. It includes the old country of Georgia and part of the old Armenia. Cf. p. 16.

N.B.—The old Georgian capital—a hamlet near the Russian new capital of Tiflis—was Mtzkhet, "a good specimen of a Georgian word."

(4) Russian Central Asia, or Western Turkistan, contains Kirghiz tribes north and west of the Aral Lake, and Turkoman tribes south and east of it. The former live in what is known as the Kirghiz Steppes, and the latter in Trans-Caspia or the old Turkistan 'Khanates' of Khiva, Bukhara, etc.

3. Next to the Russian territory in size comes the Chinese, which is larger and more populous than Europe.

(1) The Russian territory is half as large again as the Chinese, but the Chinese contains *eighteen times* as many people.

(2) Rather more than one-third of the Chinese territory, and *97 per cent.* of the total population, are in China Proper, or "The Middle State," as the Chinese call it.

(3) Of its dependencies, Mongolia is much the largest, being nearly as large as China Proper. Tibet, which is half the size of Mongolia and nearly twice the size of Manchuria, is more than five times the size of the United Kingdom.

4. The total area of the British possessions in Asia is, comparatively, not very great, being only about half the size of Europe; but they are, of course, immensely valuable.

(1) The Empire of India is a dozen times the size of the United Kingdom, and has a population of nearly 300,000,000, *i.e.* more than Africa, North America, and South America all combined.

(2) This population, though not quite so dense as in China, numbers 200 to the square mile; and, of course, when periodic famines visit the area, owing to the failure of the monsoon rains, the death-rate is appalling.

(3) More than half the area is governed directly by the British, either by the Viceroy of India himself or by the subordinate Governors (of Bombay and Madras), Lieutenant-Governors (of Bengal, North-West Provinces, Punjab, Burma), or Chief Commissioners (of Assam and Central Provinces).

(4) The chief vassal native states are Rajputana, Haidarabad, Kashmir, Mysore, and Baroda; while Nipal and Bhutan are independent states, Nipal supplying

most of the recruits for the famous Gurkha regiments of the Indian army.

5. Asiatic Turkey includes Anatolia, Mesopotamia, Syria, and part of Arabia, with a total area about three times the size of the German empire.

(1) The largest area and the densest population are in Anatolia, which is about as large as Austria-Hungary; Syria is about twice the size of England, and Mesopotamia is rather smaller than Syria.

6. Persia and Afghanistan together have an area about one-quarter that of Europe.

(1) Afghanistan is about twice, and Persia is about five times, the size of the United Kingdom.

7. The Japanese islands are rather larger, and the Philippines are rather smaller, than the United Kingdom, while the Dutch possessions are nearly four times as large as the Japanese.

(1) Sumatra alone is as large as the Japanese empire, and Java is half as large as the Philippines, while the Moluccas are not much less.

N.B.—For the French possessions, which are rather larger than the Japanese, see p. 71.

ANATOLIA.

Chapter 11.

1. As the Pontic range rises abruptly from the north coast, and the Taurus range abruptly from the south coast, there cannot be many good harbours on the Black Sea or the Levant.

(1) The north coast has no good harbour at all, nor even a safe roadstead except Sinope; but the exigences of trade make Trebizond and Samsun important—Trebizond as being the most easterly roadstead in the peninsula, and Samsun as tapping the rich wheat district of Sivas.

(2) On the south coast Marmarice and Makri have the best harbours, but Adalia (Attalia) and Mersina do most trade. Cf. the Cilician Gates.

(3) The boundary towards the Iran plateau is a vague depression running southward from Mount Ararat—where Russia, Turkey, and Persia meet—while that towards the Arabian plateau is mainly the Jihun gorge (the old *Pyramus* river).

2. The broken, island-fringed west coast has many excellent harbours, of which the best is Smyrna.

(1) Smyrna, at the head of a deep gulf which has exceptionally good communication inland *via* both the Gediz Chai (Hermus) and the Mendere Chai (Mæander) rivers, is the natural trade centre from the west.

(2) Lemnos, Mitylene, Syme, Samos, and Rhodes have famous harbours; Chios, "the fertile," is noted for wine and mastic; and all the islands have a sponge fishery, which is most productive round Syme.

(3) Crete, Chios, Samos, Rhodes, and Patmos have also special historic interest; but Crete has lost its old importance—as commanding the entrance of the Ægean Sea.

3. The surface is a broken plateau, sloping generally from the Erzerūm heights down to the archipelago coast, with the abrupt buttresses of the Pontic and Tauric ranges.

(1) The average height of the plateau is broken on the north by the deltas of the Kizil and Yeshil Irmaks, on the south by the Pamphylian and Cilician plains, and on the west by the peak of Mount Olympus.

N.B.—The Kizil Irmak is the old Halys.

(2) West of the Anti-Taurus range there is a wide central plain, dotted with salt lakes, *e.g.* Tuzla Gol, and merging northward in the barren steppes of Angora, and westward in the railway-threaded defiles of unnavigable rivers.

(3) East of the Anti-Taurus the general level rises, and is crossed by ranges from E.N.E. to W.S.W., amongst which the Tigris and Euphrates rise; but here, too, there is a typical volcanic plain dotted with salt lakes, *e.g.* Van.

4. There are, therefore, three climatic zones, with their appropriate vegetation.

(1) The north coast has damp muggy summers and damp cold winters, and the Pontic slopes are covered with timber.

(2) The plateau, shielded from damp winds both off the Black Sea and off the Levant, has a continental climate, the extremes increasing towards the east; the better watered parts produce excellent wheat, and the drier steppes are the home of the Angora goat.

N.B.—With the name *Levant*, "Sunrise" (Sea), cf. *Anatolia*, "Sunrise" (Land), the Romans having named the one and the Greeks the other.

(3) The south and west coasts have a mild even climate, appropriate to the olive, fig, orange, mulberry, "valonia" oak, opium poppy, liquorice, etc.

5. Proximity to Europe, and the fact that it links Europe to Asia, have given Anatolia considerable political importance; and the absence of navigable rivers and of other approaches to the plateau have concentrated its importance in a few centres.

(1) Thus, Brûsa, with its famous silk factories and hot springs, commands the pass below Mount Olympus, as Manissa (Magnesia) commands the Gediz Chai valley, Aidin commands the Mendere valley, and Adana commands the "plain of Tarsus" and the Cilician Gates.

N.B.—The Brûsa and Ismid districts, which raise most silk, are also rich in minerals, *e.g.* silver-lead, antimony, lithographic-stone; and zinc, manganese, emery, arsenic, and iron are found, *e.g.*, round Aidin.

(2) Angora commands the north of the great western plain, as Konia (Iconium) commands the south; Kaisariyeh (Cæsarea) commands the road below Mount Argæus to the easiest passes across the Anti-Taurus; the rocky heights of Erzerum make it an appropriate site for a great military station.

(3) The trade of these towns, like the ownership of the land, is passing entirely into the hands of Greeks and Armenians; and the sharp practices of the latter, especially as money-lenders, have led to deadly hatred between them and the Turks—illustrated by the proverb "An Armenian is as bad as nine Jews!" and by the periodical massacres.

N.B.—'German' railways are projected from Angora, *viâ* Sivas and Diarbekr, and from Konia, *viâ* Adana and Urfah, to Mosul and Baghdad. The Konia-Eregli section was opened in 1904.

THE ARABIAN PENINSULA.

Chapter 12. Mesopotamia, Syria, and Arabia.

1. Mesopotamia, though now a dreary land of ruined cities, still possesses the advantages of soil and climate which were used to such good effect in the days of the Chaldœan and Assyrian empires; but the blight of Turkish dominion has ruined it.

(1) The great plain of Upper Mesopotamia contains now only two cities—Mosul (cf. *muslin*), opposite the ruins of Nineveh, and Diabekr, which commands all the trade converging on the river-cut passes between the Syrian desert and the Kurdistan mountains, and which is the head of raft (inflated skeepskins) navigation on the Tigris.

(2) The lower plain, ancient Babylonia, has been transformed from "a garden of the Lord" into a fever-breeding swamp. Baghdad has an unrivalled position for inland trade, and is the head of steam navigation; Basra (the Bussorah of the *Arabian Nights*) is the port for ocean steamers, and exports enormous quantities of dates; Kurna commands the confluence of the two great rivers in the Shat el-Arab.

N.B.—A telegraph line from India passes up the Euphrates valley to Scutari (a suburb of Constantinople).

2. Syria has no good harbours, but there are several roadsteads.

(1) Haifa, in the lee of Mount Carmel, has the best shelter; but Beirut and Iskanderûn (Alexandretta) do most trade. Tripoli and Jaffa are mere roadsteads.

(2) As the prevailing winds are from the west, the coastal districts get the full benefit of the climatic influence of the sea.

3. The surface consists of a coastal plain and two parallel ranges of mountains with a remarkable 'rift-valley' between them.

(1) Along the rocky northern coast the plain is very narrow, but south of Mount Carmel the plains of Sharon and Philistia are much broader; and east of Mount Carmel the plain of Esdraelon gives easy access to the Jordan valley. Cf. the Haifa -Deraa railway.

(2) The mountains are high enough to have heavy falls of snow, which give unfailing supplies of water to the Jordan and the Orontes; and their terraced sides feed numerous flocks of sheep. There are also rains at the spring and autumn equinoxes—"the former and the latter rain" of the Bible.

(3) The Jordan valley is the deepest depression in the world —the Dead Sea being 1300 feet below the level of the Mediterranean—and the heat is therefore so intense that the sea is excessively salt, and the river-side vegetation is tropical.

N.B.—The depression is continued in the Gulf of Akaba. Cf. p. 18.

(4) This land, which was once "flowing with milk and honey," is now practically barren, as reckless felling of the forests has deprived the soil of all protection against winter storms and torrents; but wheat is still produced on the plains, and wool on the hills. The olive and the vine are less important now, however, than oranges and tobacco (cf. Jaffa and Latakia).

(5) Under the conditions of modern trade, the country is much impeded by its physical obstacles. For instance, a railway from Aleppo to Iskanderûn must climb or tunnel the high Alma Dagh range; one from Tripoli to Homs and Hamah must cross a rocky desert to reach the Orontes valley; the main line from Beirut to Damascus crosses the double Lebanon range; and that from Jaffa to Jerusalem has its terminus at the highest and rockiest part of the Judæa hills—a fit

place in olden days for a great capital, but scarcely for a modern railway junction.

(6) Aleppo and Damascus are the two chief towns. Aleppo commands the shortest route between the Mesopotamian plain and the Mediterranean; Damascus commands all the caravan routes round the Syrian desert converging on Beirut between Lebanon and Anti-Lebanon, and is famous for its leather industries and its fertile oasis (irrigated from the Lebanon snows).

4. Before the opening up of the great Ocean Routes, commerce was confined to the large inland seas; and Palestine was one of the first centres of this inland-sea traffic.

(1) It lies where the chief caravans of the Old World met, and its coast is backed by Mount Lebanon, which provided abundance of timber for shipbuilding.

(2) Inland there was the Syrian desert, which compelled the caravans to converge on the strip of fertile land between the desert and the sea; and in that strip the climate, with its products, varies from the Arctic snows of Lebanon to the Tropical heat of the Dead Sea lowlands.

(3) Consequently the Plain of Esdraelon was a highway for traders and for battle; and almost every known language and every known occupation met, even in a little town like Nazareth.

N.B.—The ancient Armenia—now divided between Russia, Turkey, and Persia—held a somewhat similar position between the Black Sea and the Caspian.

5. Isolated by sea on three sides, and with no great trade route across its pathless deserts, Arabia had to turn to maritime enterprise.

(1) The west coast has no harbours, and its roadsteads are made difficult by shoals and coral reefs; but Jedda (for Mecca), Yambo (for Medina), and Hodeida (for Sanaa), are busy centres.

(2) Besides several island harbours, *e.g.* Perim, the south coast possesses in Aden the best harbour within a radius of more than 1000 miles.

(3) The east coast has a fine harbour in Muscat, and a number of pearl-fishing stations on the islands of the shallow Persian Gulf, *e.g.* Bahrein.

6. Like Anatolia, Arabia is a huge plateau buttressed by precipitous mountains; and these attain their greatest height in the south-west (10,000 feet).

(1) Across the central plateau, which forms a third of the country, a ridge joins the Nejd to the capital and sacred city of Mecca; and this ridge is scarred by deep valleys in which water makes the desert "blossom as the rose." This is the home of the Arab horse, the Arab camel, the Arab donkey—all of them the most perfect specimens of their kind.

(2) The mountainous districts also form a third of the whole area, and those of El Yemen and Oman have a better climate than any other part. The Yemen ravines, with their rich volcanic soil, are the home of 'Mocha' coffee—exported from Hodeida; the Hadramût valley is famous for frankincense and myrrh—exported from Makalla.

N.B.—The other third is desert, and includes a strip of desert—the Tehama—even round the coast.

(3) Aden, like Gibraltar, is a peninsula connected with the mainland by a narrow sandy isthmus. The town lies in a large crater, where the heat is terrific; and the garrison have often to distil sea-water, though there are magnificent ancient reservoirs to catch the rare rainfall.

The island of Perim, the Kuria Muria islands, and Sokotra are politically attached to Aden, which is itself attached to Bombay.

7. The political divisions of Arabia are rather complicated.

(1) The peninsula of Sinai, which consists really of a single mountain resting upon a huge rocky mass, belongs to Egypt.

(2) The provinces of Hejaz and Yemen are under the Turks. Hejaz is important because it contains the two holy cities of Mecca and Medina, with the pilgrim routes to them ; and Yemen is important because of its fertility.

(3) Oman is independent, but has definite political relations with India ; and the rest of the country is occupied by settled Arabs—Hadesi or Fellahs—and nomads—Bedouins.

N.B.—The island of Kishm, or Tavilah, which formerly belonged to the Imam of Oman, is now under Persia ; but the port of Basidu, the nearest port to Oman, is British.

THE IRAN PLATEAU.

Chapter 13. Persia, Afghanistan, and Baluchistan.

1. THE water frontier of Persia is of little value, even for commerce, except the small portion which faces the Caspian.

(1) The Aras, Atrek, Hari-rud, and Halmand make convenient political frontiers; Bushire and Resht (Enzeli) are busy roadsteads, and Linga and Bandar Abbas have some trade; Gez and Barfrush are scarcely 'ports.'

2. The surface of the plateau is composed either of broad plains shut in by parallel mountain ranges, or of mountain masses honeycombed with ravines.

(1) The ravines are much more fertile than the plains, and a third of the whole area is useless salt-desert, salt being the only important mineral product at present, though the country is very rich in minerals.

(2) The climate is very dry, with very great extremes, except in the N.W. and N.E., where the mighty Elburz range does not cut off the influence of the Caspian from the interior; and the lack of rain is a great obstacle to agriculture, especially as most of the soil (outside the salt deserts) is very fertile.

N.B.—The Caspian lowlands, *e.g.* between Astrabad and the Atrek, are even forested.

(3) The climate and the "relief" make navigable rivers practically non-existent, and even streams for irrigation purposes are few and far between, especially on the central plateau and on the Dushtistan or southern lowlands. They are most numerous where least needed, *i.e.* near the Caspian; cf. the sturgeon fishery.

N.B.—The Karun is navigable to Ahwâz, and thence to Shushter.

(4) Animals are, therefore, more important than agriculture, though the irrigated valleys are very fertile, producing particularly beautiful roses, and opium, tobacco, wheat, and pistachio nuts. Thus, Yezd—amidst its mulberry groves, and Ispahan—amongst its wheatfields, are famed for their woollen felts, while every town on the intervening ridge of mountains—from Kashan to Kerman—manufactures the famous Persian carpets. Persian horses are equally famous—partly owing to the extreme dryness and purity of the air.

(5) The chief towns occupy characteristic positions. The political capital of Tehran is in the centre of a riverless plain protected by the most inaccessible part of the Elburz; the commercial capital of Tabriz commands the trade across the 'isthmus' (cf. Armenia with Palestine, p. 40); Mashad is the holy city of a great Muhammedan sect; Sarakhs is a frontier fortress at the mouth of the Hari-rud defile; Shiraz, with its roses and nightingales, was the home of the great poets Hafiz and Sadi; Muhamrah is a 'canal' port.

3. As Afghanistan is a 'Buffer State,' its frontiers have been carefully settled by treaty, and more or less marked out, especially along the Russian territory near Pendjeh.

(1) They are, however, almost entirely artificial except for—200 to 300 miles along the Oxus eastward from Kamiab—the death-threatening snow-blocked masses of the Hindu Kush—and the Seistan marsh in which the three Iran States meet.

N.B.—The principal pass through the Hindu Kush is the Bamian, eastward of which the Kafiristan frontier behind Chitral is barely 10 miles from Russian territory.

4. Afghanistan is the barrenest and wildest part of the great Iran plateau.

(1) Weaklings die young; and those who live, bear on their persons and in their characters marks of an unceasing struggle with nature for the means of life.

(2) The surface may be divided into three drainage areas—to the Oxus, the Indus, the Seistan marsh. The highest level is the water-parting between the Indus and the Seistan; and the lowest levels are the Seistan basin S.W. of a line from Herat to New Chaman, and the Kabul valley east of Jalalabad.

(3) The commercial and military routes are few, but very important; and they are marked by the sites of world-famous cities. Two routes—from Mashad and Bokhara—converge on the fertile province watered by the Hari-rud ('River of Herat'), the valley of which is the best route from the north-west to India; two routes—*via* Khulm and the Khaibar Pass—converge on the political capital of Kabul; two routes—*via* the Bolan Pass (and Sind-Pishin Railway) and the Halmand ('The Embanked') valley—converge on Kandahar.

There are also cross routes—from Kabul to Kandahar *via* Ghazni and Argundab, and from Kandahar to Herat *via* Girishk and Farra.

(4) Among the special products of the country are sheepskins ("postins") and the plants which yield asafœtida and castor-oil.

5. Baluchistan is geographically an extension of Afghanistan, but politically part of India.

(1) Its capital is Khalat (nearly 7000 feet above the sea), and it has two roadsteads in Gwadar and Sonmiani.

(2) The extremes of temperature are terrific, and the changes are exceedingly sudden; after frost hard enough to freeze running water at Khalat in February, *125° F. may be registered in the shade* in March.

(3) The railway from Sibi, *viâ* Quetta or Harnai, to Chaman has been extended, as a light railway, to Nushki (for Persian trade).

INDIA.

Chapter 14. Surroundings.

1. INDIA lies between an enormous area of land, and an almost equally enormous area of sea.

(1) This is reflected in the climate, with its alternation of dry and wet seasons.

(2) The sea area is entirely within the Tropics, and contains warm currents.

(3) The land area is entirely outside the Tropics, and has a great average height.

2. The coast, though long, is not very accessible, for several reasons.

(1) In many places, especially round the north and the east of the Bay of Bengal, it is simply swamp.

(2) At the mouths of the great rivers, which would naturally give the easiest access inland, the strength of the river current and the conflict of sea and river make navigation difficult and dangerous, especially on the Hugli.

(3) Between the various river-mouths the coast is monotonously regular, any possible harbours having been largely ruined by sand washed up by the sea and mud brought down by the rivers. Cf. the African coast.

3. Bombay is the only really good harbour in the whole country, but Calcutta, Karachi, and Madras are very useful.

Bombay is an island harbour—large, safe, and easily accessible—opposite the southern entrance to the Suez Canal, *via* the Red Sea. It had very bad access inland until the construction of railways across the Western Ghats, and it has no local supplies of coal; but it is the natural outlet for the trade of Western India, the

Deccan, and the Central Provinces, and, therefore, its chief exports are cotton, wheat, and opium. Cf. p. 54.

4. Karachi is the great wheat port of the Punjab, and also exports the products of the Western Himalayas.

(1) It is far enough away from the mouth of the Indus to be safe from the constant currents and periodical floods, and the level of the Indus plain has made the construction and the working of railways and canals easy and cheap. As the nearest port to Quetta and New Chaman, it has also considerable political and military importance. Cf. p. 45, § 5 (3).

5. Calcutta is one of the most dangerous and expensive harbours in the world.

(1) Both the danger and the expense come from the terrific force of the river-currents, especially during the summer rains; and, when this fierce downward current meets a spring tide going up the river, the result is a 'bore' of the most dangerous description, travelling for 100 miles up stream at the rate of 18 miles an hour, with a height of 5 to 10 feet.

(2) As the natural outlet for the immense agricultural wealth of the Bengal alluvial plain, however, it has so much importance that it is worthy of its position as the capital of the Indian Empire; and it has the great advantage of being near the best coal-mines in India—at Raniganj, in the Damodar valley.

(3) As the N.E. corner of Hindustan consists partly of deep alluvial plain and partly of high forest-clad mountains, with great heat and very heavy rains, the special exports from Calcutta are opium, rice, jute, tea, and indigo. Cf. pp. 54 and 63.

N.B.—It is the last of a dozen harbours which have stood on the Ganges-Brahmaputra delta, and all of which have been ruined by the river. The only other still remaining is Dacca.

6. Madras stands on a surf-beaten coast, without either a navigable river or necessary shelter.

(1) Its special trade is in teak from the Western Ghats, sugar from the Coromandel coast, and such products of Mysore as go eastward. Cp. p. 64.

7. The land boundaries offer practically insurmountable obstacles to invasion and commerce, except in the north-west.

(1) The Himalaya Mountains run along the north for 1500 miles, with an average height of 17,000 feet, and an average width of 150 miles; at least 100 peaks are at least *four miles high*, and there are miles upon miles of glacier.

(2) The north-east portion is defended by spurs from the Himalayas, overhanging a dense and deadly wet jungle.

(3) The north-west is accessible by two or three deep defiles across the Sulaiman Mountains, especially the Khaibar and the Bolan Passes.

Chapter 15. Surface and Climate.

1. Like the continent of Africa, India consists of a low oblong plain in the north, and a high triangular plateau in the south.

(1) The Tropic of Cancer divides the two areas in India very much as the equator divides them in Africa.

(2) As in Africa, the shape of the country makes the northern half larger than the southern.

(3) As in Africa, too, the northern half is an oblong running east and west, and the southern half is a triangle running north and south.

(4) As in Africa, again, the northern or continental half is lower, drier, and hotter, than the southern or peninsular half.

(5) The northern area includes politically, but not geographically, the dry, dreary plateau of Baluchistan on the west, and the rich river-valley of Burma on the east.

2. The Indo-Gangetic basin is one enormous plain—Hindustan—shut in by mountains everywhere except in the S.W. and S.E.

(1) The mountains in the north, being of gigantic size, supply the water for the magnificent rivers of Northern India, on which the very existence of Indian commerce and agriculture depends.

(2) The "mountains" which separate the estuaries of the Indus and the Ganges include the Vindhya range, but are really the high northern edge of the peninsular plateau.

(3) The pace and volume of the rivers, and the height from which they fall, cause them to carry down an immense amount of alluvium, which is invaluable for agriculture; and the low level of the plain offers every facility for irrigation and communication.

3. The peninsula of the Deccan is practically a continuous plateau shut in by mountains.

(1) On the west the Ghats are high, steep, and very near the sea; and, therefore, they are a formidable condensing medium to wet winds from the S.W., and a formidable obstacle to commerce.

(2) The Eastern Ghats, being low and discontinuous, present little obstacle to winds or commerce.

(3) As the double northern range—the Vindhyas and Satpuras—run east and west, they present little obstacle to the S.W. winds; and the valleys of the Narbada and the Tapti, and the Khandwa depression across the Satpuras, greatly facilitate communication.

N.B.—The *Great Indian Peninsular Railway* (G.I.P.) follows the Khandwa route, Khandwa being a junction for Allahabad, Benares, Delhi, etc.

(4) The Nilgiri Hills, in which the two Ghat ranges meet, are nearly 9000 feet high, *i.e.* twice as high as Ben Nevis; and thus they have become one of the most important sanatoria in India. Fortunately, just south of them there is a very curious defile, the Gap of Coimbatore, which separates them from the still higher Cardamum Mountains, and which gives easy communication, *e.g.* between Calicut and Trichinopoli or Madras.

4. The three great rivers of Hindustan all start near together in a lake district on the north of the Himalayas, and supply the soil, the manure, the moisture, the drains, and the highways of carriage, for all the wealth of the Indo-Gangetic plain.

(1) The Indus is usually navigable for small vessels for 900 miles—up to Attock ("Limit"), but it brings down so much mud that it is often choked up; and, therefore, its great and permanent value is for irrigation. With its four chief tributaries, it has made the Punjab ("Land of Five Rivers") one of the wheat granaries of the world. Cf. pp. 19 and 57.

N.B.—The absence of large towns along the Indus is significant of the character of the river. Contrast the Ganges.

(2) The Ganges, though nominally the main stream, starts on the south of the Himalayas, and is inferior in length and volume to its Ghogra "tributary," which starts on the north. (Cf. the Mississippi and the Missouri, the Danube and the Inn.) The Ghogra supplies the volume and the mud, while the Ganges is the more useful for navigation, especially as far as Cawnpur; in fact, the whole course of 1200 miles from Hardwar, where the river drops on to the plain, to the ocean is of more or less value for navigation.

N.B.—The distance from Allahabad to the source of the Ganges is less even than that to the source of the Jumna.

(3) The Brahmaputra has the greatest volume and pace of all the Indian rivers. Indeed, its force is quite uncontrollable, so that in the meantime it is less useful than the Ganges and the Indus.

N.B.—The upper course of the river, 1000 miles in length, under the name Sanpu, "The River," is not in India at all.

5. The cross ranges on the northern edge of the plateau receive enough rain to give birth to three considerable rivers in the Narbada, Tapti, and Mahanadi.

(1) All three are invaluable to agriculture; their valleys offer natural routes for railways, the direct route from Bombay to Calcutta running for miles along the Tapti; the valleys of the Narbada and the Tapti have a distinct effect on the climate (cf. p. 49); and the Narbada, like the Ganges, is a sacred stream.

6. The principal rivers of the plateau itself are the Godaveri, Krishna (or Kistna), and Kavari.

(1) The Godaveri, the largest of them, is more than four times the length of the Thames, and about the same length as the Indus. They are all more or less useless for navigation, but invaluable for irrigation; and they all form deltas of inexhaustible fertility.

7. The Irawadi is becoming one of the great commercial highways of the world.

(1) It is navigable almost up to the Chinese frontier, Bhamo being the head of navigation, and practically attracts the whole population of Burma to its banks, especially along the 400 miles between Rangoon and Mandalay.

8. As India stretches for nearly 2000 miles from north to south, and varies in height from a few feet below, to five and a half miles above, sea-level, the climate also varies greatly.

(1) This variation depends much more on longitude and elevation than on latitude: the average temperature of

Hindustan is actually higher than that of the Deccan, and the difference between the Thar Desert and Bengal is greater than that between the plain and the plateau.

9. The regulating factor is the distribution of the Monsoons.

(1) From May to September (more or less inclusive), the up-draught from the heated continent draws the S.E. 'Trades' across the equator right up to the Himalayas, the rotation of the earth deflecting them, north of the equator, so that they reach India as S.W. Monsoon winds.

(2) During the 'northern' winter the N.E Trades blow regularly from the Tropics to the Equator, and are called the N.E. 'Monsoons.' They are naturally dry winds, but towards the east they gather sufficient moisture off the Bay of Bengal to deposit a fairly heavy rainfall on the low Eastern Ghats. Cf. the N.E. of Ceylon.

(3) As the S.W. winds come over hundreds of miles of tropical sea, they arrive saturated; and, as they naturally deposit their burden towards the N.E., the heaviest rains are on the Western Ghats and on the Khasi Hills. On the latter, Cherra-Punji has recorded an annual rainfall of more than *22 yards.*

N.B.—This S.W. Monsoon is deflected up the Ganges valley as a S.E. wind by the great wall of the Himalayas.

(4) The whole Indo-Gangetic basin may, therefore, be divided into five areas—dry hills and dry plains in the N.W., damp hills and damp plains in the N.E., and a medium climate with a medium elevation on the water-parting of the Delhi ridge.

(5) As the Deccan is entirely within the Tropics, the sun heat is always great, though modified by the height, and the length of the day varies very little. In the south the difference of time between the longest and the shortest days is only one hour, and the difference

of temperature between the hottest and the coldest is only 5° or 6°.

(6) Where the level is so low that there is absolutely no condensing medium, as in Sind, or where mountains entirely anticipate the wet winds, as in Mysore, there are areas of desert and semi-desert. Cf. The Thar.

Chapter 16. Productions.

1. The vegetation, both indigenous and imported, varies with the climate.

(1) For instance, dry hills produce wool, and dry plains produce wheat; damp hills produce tea, and damp plains produce rice.

(2) In a country with such a large area of alluvial plain, with sufficient heat and moisture, the vegetation is almost sure to be more important than the mineral wealth.

(3) Motives of economy, the climate, and religious scruples cause the vast majority of the people of India to live mainly on vegetable food.

2. The vegetable wealth is divided between agricultural, pastoral, and forest products.

(1) The agricultural products include grain and fibre.
(2) The pasture supplies, especially, horned cattle and wool.
(3) The forests produce food, shelter, clothing,—timber for commerce and for domestic use.

3. The chief grains are rice, millet, and wheat; the chief fibres are cotton, jute, and tobacco.

(1) Rice and millet form—with the fruit of the mango—the staple food of the natives. Both are nutritious and prolific, but rice requires the more moisture; consequently, rice grows on all the deltas and low coast-strips, especially round the Bay of Bengal, while millet grows inland, especially in the province of Madras.

N.B.—Burma produces rice to the value of some £6,000,000 a year.

(2) Wheat flourishes on the low dry plains of the Punjab and on the high dry tableland of the Central Provinces.

(3) Cotton has the same climatic connection with rice as wool has with wheat; and so it flourishes in the Ganges valley and on the sticky 'black-soil' lands of Bombay, especially on the plains of Khandesh, North Berar, and Wardha—where the soil is a fertile decomposition of volcanic rock, and the S.W. Monsoons have access *via* the Tapti valley. Cf. p. 49.

(4) Jute grows better on the sand-banks of the Bengal rivers than anywhere else in the world, especially between Goalpara and Purniah, where the Brahmaputra more than repairs the ravages caused by such an exhausting crop.

(5) The tobacco is grown mainly on the low lands along the Kavari, the Sabarmati, and the Irawadi, especially round Trichinopoli and Kaira.

4. Amongst the other agricultural products, the most important are oil seeds, tea, and opium,—coffee, cinchona, and indigo being next in importance.

(1) The oil seeds are somewhat a subsidiary crop to rice, and are in demand locally for food, outward application, and lighting purposes.

(2) The tea requires iron and vegetable refuse in the soil, heat and moisture, and a slope steep enough to prevent the moisture from settling round the roots of the plant. Assam provides the best site for the lowland variety, especially round Silchar, Sibsagar, and Dibrugarh; and the Darjiling and Kangra valleys are the best for the highland variety.

(3) The opium, like the tea and tobacco, has a political importance, because it gives local employment to a considerable number of workmen, and because it is a source of large revenue to the Government. The chief centres are Patna and Ghazipur.

(4) The coffee comes mainly from the Ghat valleys of Coorg and Mysore, where the water supply is plentiful, the heat great, and the accumulation of vegetable refuse enormous.

(5) The indigo, which also employs local labour, is grown mainly in Bengal, Behar, and Madras; and the cinchona is planted largely to protect the seedlings in the Himalayan tea gardens, though very valuable in itself for its 'Peruvian bark.'

5. Pasture must be limited in a densely-peopled country like India, except where the rainfall is insufficient and there are no facilities for irrigation.

(1) As milk is very important to an almost vegetarian population, cows are kept everywhere; but the special demand for horned cattle for transport and field labour is supplied largely from the semi-desert land between the Luni river and the Aravalli Hills.

(2) The dry hills of the N.W. feed sheep and goats, which are kept mainly for their wool; most of the beautiful Kashmir 'wool' is 'mohair,' *i.e.* from goats.

(3) The damp forested hills of the N.E. and the Malabar coast still harbour the elephant; the sandy desert of Sindh requires the camel; and the salt plains of Rajputana are famous for their wild asses (cf. p. 30).

6. The forest products include teak, sal, and deodar; bamboo, mango, and palm.

(1) The teak comes from the wet jungles of Bombay, Assam, and Burma; the sal is characteristic of the drier climate of Central Hindostan; and the deodar and other cedars are sub-tropical trees, growing on the slopes of the Himalayas.

(2) The bamboo and mango are two of the most useful products of India, the latter providing food (between the grain harvests) to thousands of peasants, and the former providing almost every possible kind of utensil and furniture.

(3) The most useful palm is the coco-nut, which grows along the shores in the Tropics, and supplies fibre for mats and ropes. The date palm also is found—along with sandalwood—on the dry hot plains of the Deccan, especially in Mysore.

7. The minerals, though much less important than the vegetation, are valuable, and include coal, salt, oil, tin, gold, and precious stones.

(1) The coal is found in the Damodar and Nårbada valleys, and in the hills of Chutia Nagpur, where it is very useful for the two railway routes from Bombay to Calcutta. There is also some in the Godaveri valley, near the main line from Bombay to Madras ; and a few small fields—of excellent quality—have been found in the N.E. of Assam.

(2) The salt is dug from the "Salt Range" in the N.W. of the Punjab, especially at Kohat, and evaporated along the coasts and from the brine lakes of Rajputana.

(3) The petroleum is found chiefly in Burma and Upper Assam ; and there are rich deposits of tin—the characteristic metal of the Malay Peninsula (cf. Queensland and Tasmania)—in the Tenasserim district of Burma.

(4) The gold is found mainly in Mysore, and the bulk of the precious stones in the Deccan and Burma (rubies).

Chapter 17. The Chief Provinces. I.

1. Kashmir consists mainly of two long valleys, running down from S.E. to N.W., with a third and smaller valley parallel to them in the S.W.

(1) The latter is the famous Vale of Kashmir, and was once a lake. The alluvial plain left by the natural draining of the lake is so flat that the Jehlam river is navigable for 60 miles, and this accounts for the importance of Srinagar.

(2) At Leh there is practically neither rain nor snow; the intense dryness, with its accompanying absence of clouds to keep off heat during the day or to check radiation at night, causes great extremes of heat and cold; and the rapid evaporation thus produced has converted the remains of the old lake into a series of salt-pans.

(3) Leh itself, though well sheltered at the bottom of the Indus valley, is about 12,000 feet above the sea; and the trade-route northward to Yarkand and Khotan is the highest in the world, the Karakoram Pass being 18,500 feet above the sea.

2. The "Five Rivers" from which the Punjab was named, are the Indus, Jehlam, Chenab, Ravi, and Sutlej.

(1) It is part of the great alluvial plain of Hindustan; and the districts near enough to the Himalayas to have a fair rainfall or near enough to one of the rivers to be easily irrigated are very fertile, especially between the political capital of Lahore and the great wheat-market of Amritsar.

N.B.—Each of the wedge-shaped areas between the pairs of rivers is called a Doab or "Two-Rivers."

(2) The chief mineral is salt, from the great Salt Range in the north-west, the beds at Kohat being fully 1000 feet thick.

N.B.—Certain trans-Indus districts, including Kohat, were formed into the "North West Frontier" province in 1901, with Peshawar as capital.

(3) The province contains several typically Indian cities—*e.g.* the military depots of Ambala and Rawal-Pindi, the frontier fortress of Peshawar, the summer-station of Simla, the rail and river junction of Multan, the ancient Moghal capital of Delhi. Cf. p. 64.

3. Rajputana and Sind (which belongs politically to Bombay) are largely desert and semi-desert.

(1) The low level and the fierce heat make evaporation so rapid that even the water of the Luni river is salt except after rain; and thousands of tons of salt are manufactured off the Sambhar lake every year.

(2) Ajmere occupies a good central position for a capital; and Haidarabad stands—characteristically for an Indus-bank town—some three miles away from the river to be out of reach of the floods.

N.B.—For Karachi, Jaipur, Shikarpur, and Sakhar, see pp. 47 and 67.

4. The North-west Provinces and Oudh have very fertile soil, a fair rainfall, and exceptional advantages for transport and irrigation in the Ganges, Ghogra, and Jumna.

(1) The chief crops are the opium-poppy, wheat (in the dry season), and rice (in the wet season).

(2) It is a land of historic memories—connected with the Mutiny, *e.g.* at Lucknow, Cawnpur, Meerut, and contains in Benares the oldest city of India and the centre of Hinduism.

N.B.—For Allahabad, Agra, and Rurki, see pp. 64 and 65.

5. The mass of Bengal is so low, so hot, and so damp, that its fertility is quite phenomenal; and this has drawn to it a very dense population.

(1) The low level, the heavy rain, and the rapid descent of the Himalayan streams cause large areas to be simply expanses of alluvial mud or actual swamps; and the vegetation varies from poppies round Patna and indigo in Behar to rice and jute in the delta swamps and the dense wet-jungle of the Sundarbans where river and ocean meet.

(2) The productiveness of the soil has always rendered severe agricultural labour unnecessary, as the climate has rendered it impossible; and the leisure so provided gave time for work which demanded minute detail

without exertion, *e.g.* the filagree-silver ware of Orissa. Cf. the mosaic work of Agra.

(3) In an agricultural district, too, there is generally no very great concentration of people except at commercial centres; and Bengal is no exception to this rule, Calcutta and Patna being the only important cities. Cf. pp. 63 and 65.

(4) The hill-station of Darjiling occupies a typical site on a ridge of the Himalayas nearly 7000 feet above the sea. It has a railway to Calcutta, and the gradient falls 6000 feet in the first 20 miles.

6. Assam[1] includes 450 miles of the Brahmaputra valley, the plain of Sylhet, and the valley of Cachar.

(1) With the heaviest rainfall known in the world, intense heat, and abundance of alluvium, the vegetation is tropical,—tea and teak on the slopes, rice and oilseeds on the flats, and jute on the river sandbanks.

(2) The largest town is Sylhet, but the climate is so bad that the seat of government is at Shillong, on a ridge of the Khasi hills 5000 feet above the sea.

(3) The Brahmaputra is so laden with silt from its upper course that it has raised both its banks and its bed above the level of the surrounding country; and the slightest obstacle, *e.g.* a steamer at anchor for a night, is sufficient to cause an accumulation of silt which may alter the course of the river. These alterations have sometimes been very destructive to life and property, but the agricultural value of the annual floods is literally enormous.

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[1] Now enlarged as "Eastern Bengal and Assam."

Chapter 18. The Chief Provinces. II.

1. The Central Provinces include important areas of three great river basins.

(1) The Narbada valley grows more wheat than any other equal area in India outside the Punjab, and provides an exceptionally easy route for the trunk line from Bombay to Upper India *via* Jabalpur.

(2) The Chattisgarh plain is so fertile and so well watered by the Mahanadi system that it has been called "the wheat and rice granary of Central India"; and the trunk line from Bombay to Calcutta runs across it *via* Raipur.

(3) The Godaveri basin, especially between Nagpur and Chunda, produces exceptionally fine cotton, and has valuable deposits of coal.

(4) A large portion of the territory is still covered with forests, mainly of sal, from which lac and tasar-silk are collected.

2. Berar is practically the basin of the Puma river, along which there is rich "black-cotton" soil.

(1) The shelter of the Western Ghats makes the climate dry, while the sticky, black soil has a marvellous power of retaining moisture; and consequently wheat and cotton flourish equally well.

(2) The main line from Bombay to Calcutta *via* Akola and Amraoti offers every facility for transport.

3. Haidarabad, or the Nizam's Dominion, is half a dozen times as large as Berar, but much less important.

(1) The nearness of the Western Ghats to the sea, their height, and their abrupt seaward face, cause the precipitation from the S.W. monsoons to be practically completed on the Bombay side of the range; and, though the clouds temper the summer heat, they drop little or no rain.

(2) Except along the foot of the Ghats, where the soil is good enough and the water supply sufficient to grow cotton and oil-seeds, the rough stony plateau is far from fertile, even in the best watered parts.

(3) The most valuable product is the coal of the Singareni district.

N.B.—For Haidarabad city, see p. 64.

4. Mysore has a strong resemblance in climate, soil, and situation to Haidarabad.

(1) The climate suits sandalwood, which is much in demand for the carvings and sacrificial ceremonies of the Brahmans. The wood is shipped from the Madras port of Mangalore.

(2) The hard rocks of the south-east contain gold-bearing quartz-reefs, especially round Kolar; and the main line from Bombay to Madras *via* Bangalore (see p. 64) gives transport through the district.

5. Coorg, the "steep" or the "crushed," is a mountainous little province crushed up into the peaks of the Ghats.

(1) The combination of hills, abundant rainfall, and tropical heat has covered it for centuries with dense forest, which has left a deep accumulation of vegetable refuse in the soil. This makes an ideal site for coffee plantations.

N.B.—The coffee is of the very finest quality, but is often spoilt in transport—especially *viâ* the Red Sea—by bad ventilation in the vessels.

6. Bombay has five natural divisions—Sind (cf. p. 57), the Gujarat plain, the Tapti valley, the Konkan coast, and a strip of the Deccan plateau.

(1) The Gujarat plain grows cotton, especially round Ahmedabad, and tobacco, especially round Kaira (cf. p. 54); and the Rann of Cutch is an ideal place for the production of salt by solar evaporation.

N.B.—The preference among the natives for 'solar-salt' is due entirely to religious reasons.

(2) The Tapti valley contains the exceedingly fertile plain of Khandesh, which produces very good wheat and

cotton. Indeed, Surat used to give its name to cotton in the English market.

(3) The Konkan district enjoys such advantages of climate that teak flourishes, especially in the south or Kanara part, and rice can be grown without irrigation. Its main importance, however, is due to its command of the passes across the Ghats—especially the Bhor Ghat and the Thal Ghat, by which the *Great Indian Peninsula Railway* has direct communication from Bombay with Madras and Calcutta.

N.B.—There is also a railway across the Ghats from the Portuguese port of Goa *viâ* Dharwar and the military centre of Belgaum.

(4) The Deccan strip is so much cut off from the S.W. monsoons by the mountains that it has very light rainfall; and, as the rivers derive their water entirely from the monsoons, a deficient monsoon not only makes irrigation more necessary, but also decreases the river-supplies for irrigation. The climate and soil suit millet, however, and are much more healthy for Europeans than the tropical swamp along the coast (cf. Poona, p. 66).

7. Madras has three natural divisions—the east or Coromandel coast, the west or Malabar coast, and the central plateau.

(1) The east coast is dependent for water on the N.E. monsoons and the irrigation works from the three great rivers; rice, sugar, and oil-seeds are grown on all the deltas and on the damp parts of the Carnatic plain, while cotton and tobacco flourish round Tanjore and Trichinopoli.

N.B.—Madura is the holy city of the south, as Benares is of the north.

(2) The Malabar coast, of course, gets the full force of the S.W. monsoons, and has corresponding vegetation. Rice grows without irrigation in Travancore; cardamoms and pepper flourish south of Calicut; coco-nuts thrive to perfection along the shore; the mountain

slopes are covered with teak, ebony, and satin-wood; and on the low—and therefore much drier—plain of Coimbatore (the Pal-Ghat) cotton is cultivated. Cf. the word *calico*, from Calicut.

(3) The central plateau, being cut off from both monsoons, produces mainly millet, cotton, and indigo, especially round Bellary; but it contains the important hill-station of Utakamand.

8. Burma may be divided politically into Upper and Lower, and geographically into hills and plains.

(1) Lower Burma is the greatest rice-producing area in the world, rice being grown all over the low lands of Arakan, Tenasserim, and the Pegu delta, and teak on all the hills.

(2) Upper Burma, being much less exposed to wet winds, produces millet and cotton.

N.B.—For Mandalay, Rangoon, and Maulmein, see p. 64.

Chapter 19. Towns.

1. As the natural resources were not such as to attract the inhabitants into large industrial centres, the sites of the old towns were chosen for political and other reasons.

(1) These included easy defence, facilities for obtaining food, superstition, natural wealth in salt or flint or clay, and conveniences for trade.

2. Calcutta contains about 1,120,000 (with Howrah, 1,280,000), and Bombay about 770,000 inhabitants.

(1) Calcutta is essentially mercantile, though there are important jute and paper industries. It is the largest city in the British Empire except London. Like most Indian cities, it has a White and a Black part. It was the creation of the British "adventurers"—where the gigantic agricultural wealth of Bengal must converge to leave the country.

(2) Bombay is also a British creation. It is really a more important commercial centre than Calcutta, and has also great industries, especially cotton. Cf. p. 46.

3. Madras has rather more than 500,000, and Haidarabad has rather less than 450,000, inhabitants.

(1) Madras was also of British creation, but is hopelessly lacking in the requirements for a great mercantile or industrial centre. It is therefore, relatively a literary and professional centre.

(2) Haidarabad, the capital of the principal Deccan state, was founded on a small plain, watered by a fair-sized river, within easy reach of the Golconda diamond mines, and surrounded by a ring of defensive hills.

4. There are six cities of 'third rank'—Lucknow (264,000), Rangoon (230,000), Delhi (210,000), Benares (210,000), Lahore (200,000), and Cawnpur (200,000).

(1) Lucknow owed its site to the caprice of a local chief, and the industrial arts fostered by an Oriental court still linger. Its position has made it in modern times a natural railway junction, and its history in connection with the Mutiny made it an important military centre. Its commercial value would be greater if the Gumti were not so deserving of its name, "The Winding One"; but the land round is so fertile that it has been called the "Garden of India."

(2) Rangoon owed its old importance to its sacred site, and now commands the mouth of the great Irawadi.

(3) Delhi, from its position on the Indo-Gangetic water-parting, enjoys the arable advantages of the Ganges basin and the pastoral advantages of the Indus basin, and commands the through trade between the two. The scene of some most stirring incidents during the Mutiny, it stands on the ruins of ten cities!

(4) Benares, the oldest city in India, owes its importance mainly to historical associations. It is considered very

sacred by the Hindus, and its riverside "Ghats" or stairs are haunted by "holy" men of unique filthiness and deformity. It is a very convenient centre for the sacred Ganges, and is a railway junction.

(5) Lahore is the natural capital of the Punjab, the junction of four important railways—to Peshawar (95,000), Bombay, Calcutta, and Karachi (*via* Multan).

(6) Cawnpur, the scene of Nana Sahib's foul treachery, is a natural rail and river junction, which has attracted a large leather, wheat, and cotton trade.

5. There are seven cities of 'fourth rank'—Agra (188,000), Ahmadabad (185,000), Mandalay (183,000), Allahabad (176,000), and Amritsar, Jaipur, and Bangalore (160,000).

(1) Agra, an old Moghal capital, is a through-trade centre between Delhi and the Deccan, commanding the sudden bend in the Jumna.

(2) Ahmadabad, an old Musalman capital on the fertile Gujarat plain, owes its present importance to the growing and weaving of cotton, and to its position where the Bombay and Baroda railway crosses the Sabarmati river.

(3) Mandalay, owes its importance to the fact that, as Burma is very long compared with its width, all traffic and population converge on the great waterway. (Cf. Egypt and the Nile.)

(4) Allahabad, at the confluence of the two sacred rivers of Hindustan, was a great pilgrim centre; and, as the terminus of the chief—and, till lately, the only—trunk line from the Ganges plain to the Deccan, it still attracts pilgrims, and after the Mutiny became the seat of the Provincial Government.

(5) Amritsar, the sacred headquarters of the Sikhs, commands the Kangra tea trade and the Kashmir wool trade (manufacturing shawls of the wool), and collects the wheat of its fertile surrounding plain.

(6) Jaipur, a Rajput capital, has rail connection with the salt works of L. Sambhar, and supplied the white marble and red sandstone for the splendid buildings of Delhi and Agra.

(7) Bangalore, on one of the highest parts of the Deccan plateau, has a fine climate ; and, as a natural railway-junction between Bombay, Madras, and Mysore, it has attracted a large population, especially of Europeans.

6. There are a dozen cities of 'fifth rank'—Poona (150,000), Patna (135,000), Bareilly, Nagpur and Srinagar (125,000), Surat, Meerut, and Karachi (about 120,000), Madura, Trichinopoli, and Baroda (about 100,000), and Gwalior.

(1) Poona stands, at a height of more than 10,000 feet, at the eastern, *i.e.* the dry, end of the Bhor-Ghat pass across the W. Ghats. An old Maratha capital, it is still the headquarters of the Bombay Government during the rains.

(2) Patna, the centre of the opium trade, has easy access by rail to the Himalayan sanatoria, the Nipal forests, and the saltpetre deposits of Behar.

(3) Nagpur, another Maratha centre, is on the direct line from Bombay to Calcutta, and has a branch line through the splendid cotton lands of the Wardha valley. Bareilly is also a cotton centre.

(4) Srinagar, on the alluvial plain of the Vale of Kashmir, with 60 miles of navigation on the Jehlam, is the centre of all the Kashmir trade, especially in wool and tasar-silk (from the jungles).

(5) Baroda was more important when it controlled the trade between the coast and the interior, as Surat was before up-river harbours were displaced by ocean ports.

(6) Gwalior is a typical old Rajput rock-fortress, as Karachi is a typical new British grain port (cf. p. 47).

7. Among the smaller towns, several have considerable military, historic, or industrial interest.

(1) Simla, Darjiling, and Utakamand are summer stations.

(2) Peshawar, Rawal-Pindi, Quetta, and Ambala are military stations.

(3) Chittagong, Maulmain, and Negapatam are rising ports.

(4) Tanjore, Bellary, Raipur, and Shikarpur are commercial centres, the latter collecting goods on the edge of the semi-desert tract for transmission to Kabul and Herat.

(5) Sakkar stands where the Indus can be bridged ; Cuttack commands the railway crossing the Mahanadi just above the delta ; Rurki is the headquarters of the Ganges canal system.

(6) Calicut is the oldest port in India, and gave its name originally to *calico* ; the names of Arcot and Plassey are forever bound up with the famous story of the Conquest of India ; and Meerut was the scene of the outbreak of the Mutiny.

(7) Portugal owns the territories of Goa, Dumao, and Diu ; and France has five factories—Pondicherri, Chandernagore, Mahé, Karikal, and Genaon, and the station of Masulipatam.

'INDIAN' ISLANDS.

Chapter 20. Ceylon, etc.

1. CEYLON, which is nearly as large as Scotland, reproduces closely the climatic and vegetable conditions of the south of the Deccan, of which it is physically a continuation.

(1) As an island, its temperature is rather more even, and its rainfall more certain; but the dominating factor is still the Monsoons, and the eastern side is still much drier than the west. The alternation of sunshine and rain is so regular as to give rise to the saying—"If you stick an iron bar into a macadamised road, it will blossom like Aaron's rod!"

(2) The island of Rameswaram, and a series of coral reefs called Adam's Bridge, make an almost continuous division between the Gulf of Manar and Palk Strait; the warm shallow waters of the Gulf contain the valuable pearl-oyster, and their shores are covered with coco-palms.

N.B.—As there is no channel deep enough for steamers, the surveys have been made for a railway across Adam's Bridge.

(3) The whole island slopes up to the central mass of Adam's Peak (more than twice the height of Snowdon); and the gradient, the deep forest refuse, the heavy rain, and the iron-impregnated soil, make it an ideal site for the tea-plant. And, as usual, the cinchona accompanies the tea.

(4) The island contains very rich plumbago (graphite) mines; the river gravel is rich in rubies and sapphires; and the forests are said to be fragrant with nutmeg and cinnamon.

(5) Colombo, a magnificent artificial harbour, is the most central port of the Indian Ocean—'the Clapham Junction of the Eastern Seas'; it controls almost the whole

export trade of the island, and has attracted a population of 150,000—some of them from the old export centre of Galle.

(6) Trincomali—where the Mahavillaganga empties after its 150 miles' run from the Horton Plains below Adam's Peak—is a finer natural harbour than Colombo; but its inaccessible situation leaves it without trade or population.

(7) The old capital of Kandy is a little highland town, with beautiful scenery, a superb climate, and one of the finest Botanic Gardens (at Peradenia) in the world.

2. Among the smaller islands in the Indian Ocean, the most important belong to Britain.

(1) The Andamans are used mainly as a convict settlement and forest 'preserve,' though Port Blair is one of the finest harbours of Asia, and the timber port of Stewart Sound is almost equally good; and the Nicobars, which are part of the same submarine plateau as the Andamans, export coco-nuts, edible-nests, sea-slugs, and tortoise-shell (really 'turtle-shell') from Nancowry Harbour.

(2) The Laccadivs, Maldivs, and Chagos islands are groups of coral formation. They export coir; and Diego Garcia, a large atoll in the Chagos group, is an important coaling-station. Christmas island, a similar atoll south of Java, exports phosphate of lime; and the neighbouring Keeling or Cocos islands export coco-nuts.

INDO-CHINA.

Chapter 21. Siam, Straits Settlements, etc.

1. As a "Buffer State" between British and French dominions, Siam has been carefully delineated, and the Franco-Siamese Treaty of 1904 gives France the harbour of Krat on the Gulf of Siam.

(1) The native name is Muang Tai—"The Free Kingdom"; the name *Siam* is another form of *Shan.*

2. It is a land of parallel mountain ranges running from north to south, drained by the Me Nam and Me Kong river systems, and includes some Laos (Shan) States.

(1) The Me Nam system has much the wider and richer basin, the hills being covered with teak (especially near Chieng-Mai), and the plains with rice, while the villages are surrounded by bamboos, areca-palms, and coco-palms; and the western ranges are rich in tin.

(2) The damp heat and the thick jungle make the climate very deadly, even to the Chinese miners in the gold districts of Kabin and Watana on the Korat plateau.

(3) Bangkok, the capital, is the only sea-port, and cannot give access to large vessels; Ayuthia is a river port, collecting rice, teak, bamboos, and rattans for export *viâ* Bangkok, which has rail connection with Paknampo.

3. The Malay Peninsula reproduces the characteristic features, vegetation, and minerals of Southern Burma, with increased heat and moisture.

(1) As in Burma, the low coast-lands produce quantities of rice, the river valleys produce bamboos and all kinds of hard timber, and the mountains (which are 8000 feet high) yield about half of the total supply of tin in the whole world.

(2) The peninsula also produces palms along both shores, especially the coco-nut; rubber and rattans from the jungle; gambier, pepper, and tapioca from the plantations; and various kinds of spice.

(3) Penang ('betel-nut') ousted Malacca as the chief centre of trade, thanks to the good harbourage between the island and the mainland of Wellesley—cf. the position of Hong-Kong with regard to Kowlun; but it has now itself been ousted by Singapore.

(4) The Protected Native States,—Perak, Selangor, Sungei Ujong, Negri Sembilan, Pahang, and Johor,—form an area nearly as large as Scotland. They all produce tin, especially Perak (in the Larut and Kinta districts); and their products include rubber, rattans, camphor, sago, and pepper.

(5) Singapore has a magnificent and absolutely free harbour on the enormously important waterway of the Malacca Strait. As the island is very low, and has a very hot, damp climate, it is remarkably unhealthy, but can produce such plants as pine-apple, gambier, and pepper.

N.B.—Its importance would be greatly decreased by the cutting of a canal across the Kra Isthmus (44 miles).

4. French Indo-China consists of three areas—Tongking, Annam, and Cambodia-Cochin-China.

(1) Tongking is a forested highland encircling the pirate-haunted delta of the Red River and the Thai Binh; Hanoi is the capital, and Haiphong the chief harbour—exporting teak, rice, and coal. It is the most important part of the French possessions—the most densely peopled, the most productive, and the most direct route to S.W. China—*viâ* the Hanoi-Laokai railway.

(2) Annam is a high mountain chain, which cuts off communication with the Me Kong—*i.e.* with the Lao, Boloven, and Attopeu plateaus—except by a few passes, that of Ailao between Quang-tri and Sebang-hien being the most important. Tourane, the best harbour, is near valuable deposits of coal, and exports teak, spices, tea and coffee.

(3) Cochin-China and Cambodia are the delta of the Me Kong—one of the largest deltas in Asia; and, though the great natural reservoir of the Tonlé Sap Lake helps to moderate the floods, the inundations are so regular that the rice-crop is enormous, especially round Saigon and Cholon. Saigon monopolises the coastal, and Pnom-Penh the inland trade.

N.B.—Round the Tonlé Sap there are magnificent ruins of some old-world civilisation, especially at Ankor.

(4) The Me Kong struggles through the limestone defiles of Yunnan on to the sandstone Lao plateau, and then drops to practically the delta level; and, as at each geological division there is a considerable fall, the river has been of much less use than its length (2500 miles) and volume would suggest. Small gun-boats can, however, pass over all the rapids up to Luang Prabang, the capital of the French Laos territory.

(5) In the great lake and all along the China Sea coast there is a busy fishing industry, *e.g.* off the old Annam stronghold of Hué.

N.B.—Shrimp-paste, or "Nuoc-mam," is a favourite food, and is even used as a medicine.

(6) France also leases from China the Bay of Kwang-Chau-Wan (on the Lien-Chau peninsula), which is under the direct authority of the Governor-General of French Indo-China.

THE CHINESE EMPIRE.

Chapter 22. China Proper.

1. In spite of its huge size and great diversity of surface, China Proper has fairly definite natural boundaries.

(1) On the north, the boundary runs along a continuation of the Altyn-Tagh or Nan-Shan mountains and over thinly peopled steppes, which separate it naturally from its dependencies of Mongolia and Manchuria.

N.B.—Part of the frontier is still marked by the Great Wall.

(2) On the west, the buttress of another dependency, the Tibet plateau, is even more distinct.

(3) On the south, it is practically bounded by the ranges which form the watershed between the Si-kiang or Canton river and the Song-ka or Red River, though part of Yunnan also drains into the Salwin and the Me Kong.

(4) The low sandy coast of the Yellow Sea has few harbours; but the steep rocky coast south of the Yang-tse estuary has many excellent ones, though communication inland is made rather difficult by the Nan-Shan mountains.

N.B.—Distinguish these mountains which separate 'the Red' and the Blue' basins, from the other Nan-Shan range, which separates Mongolia from Tibet (Nan-Shan = 'Southern Mountains').

2. The surface is divided into two nearly equal areas by the Yang-tse-kiang or Blue River.

(1) The southern area consists of an intricate system of low mountains, running generally east and west, with its greatest height in the Yunnan plateau and its lowest level in the Hunan lake district. The main ridge—the Nan-Shan or Nan-ling mountains—separates the Yang-tse basin from that of the Si-Kiang.

(2) The northern area may be subdivided into plain and mountains. The plain includes the entire lower basins of the two great rivers—from the Po-yang Lake to the part of the Great Wall due north of Peking; the mountainous region is all along and west of the grand southward reach of the Hwangho or Yellow River, and its main ridge—the Peling or Northern mountains—are a continuation of the Kwen-lun, separating the 'Yellow' from the 'Blue' basin.

(3) Some characteristics of these various areas are very important. Thus, much of the plain is so low, and the river-beds have been raised so much by silt, that floods are very common and terribly destructive; the deep valleys of the N.W. are covered with loess—intensely fertile yellow dust blown from the desert by the 'Yellow' wind in winter; the Peling mountains are an almost complete obstacle to communication between the fertile Wei and the Han valleys.

3. The determining factor in the climate is the position of the country in the North Temperate zone on the east of the largest land-mass in the world.

(1) The temperature is one of extremes, increasing towards the north and decreasing towards the sea; and the winter cold is accentuated by the dry N.W. 'Yellow' winds. Cf. p. 22.

(2) The humidity depends on the S.E. monsoons, which blow inland all through the summer off the warm China Sea, slightly moderating the heat and guaranteeing that combination of warmth and moisture which offers such rewards to agriculture. The position with regard to the wet S.E. winds, and the height, make the S.E. mountains much wetter than the low northern plain.

(3) The alternation of dry and wet seasons has some important results. The dry cold winters maintain the health and energy of the people, and the 'Yellow' winds provide a soil—the loess—out of which none of

the fertilising elements have been washed by rain; the warm damp summers offer every possible inducement to agriculture—except a uniform volume in the rivers—and enable some crops to be grown which are generally confined to the Tropics, *e.g.* rice and sugar-cane.

(4) The variation in volume, of course, affects the usefulness of the rivers, even if there were no floods. For instance, at Ichang, the head of navigation for large steamers, there is a regular yearly variation of *at least forty feet* in the level of the Yang-tse; and at Chung-King, the head of navigation for smaller steamers, there is a similar variation.

On the Hwangho—'China's Sorrow'—the variation is equally great and much more destructive. Again and again its course east of Kaifeng has been changed—with most deadly effect. In 1852 a single flood moved its estuary 300 miles—from within 100 miles of the Yang-tse to its present embouchure into the Pechili Gulf; in 1887 its banks were burst again at the same place by a gigantic flood which drowned *at least one million* persons!

(5) The change of monsoons has another disastrous effect in the typhoons, which always move westward and poleward from the centre of damp, hot, calm air that gives them birth; and which, therefore, make navigation off the S.E. coast of China exceptionally dangerous.

4. The chief occupations in China are agriculture and fishing, but there are manufactures and a little mining.

(1) The agricultural products include rice and sugar-cane from the hot low swamps, wheat and beans on the drier low land, tea and mulberries (for silk-worms) on the warm damp hills, and opium and bamboos or oranges and cotton everywhere. Vegetables and flowers are also cultivated everywhere in this 'Flowery Land.'

(2) The fisheries are exceedingly important, both inland and along the coast. It is said that 40,000,000 Chinamen make their living by fishing—with every kind of line and net, by day and by night, and with every imaginable device and decoy, animate and inanimate.

(3) China is remarkably rich in minerals, especially coal. The largest known coal-field in the world is in the S.E. of Shansi, and it is of exceptionally good quality. There is another large field, of inferior quality, in the west of Shansi, and there are valuable deposits in hills west and east of Peking, in the west of the Shantung peninsula, and in the south of Hunan, the last having very easy access to the Yang-tse *via* the Siang. Shansi is also very rich in fine iron, lime-stone, and potter's clay; and copper is plentiful in Yunnan.

(4) Silk has been manufactured for thousands of years, and still is the most important product of the country; but cotton and rhea are manufactured, especially round Shanghai, and porcelain—another old industry (cf. the word *china*)—is very important. Bean-cake and straw-plait are also characteristic products.

(5) Agriculture, mining, and manufactures would all be greatly improved with better means of transport. The one great natural waterway is the Yang-tse, and the Imperial Canal—from Hangchou to Tientsin—is very important; but almost all the rivers are actually dangerous like the Hwangho, or are so impeded by rapids that the cost of transport is greatly increased, *e.g.* the Han and the Siang-kiang.

Railways are at last spreading in the north-east; and the Peking-Kiuchau line, *viâ* Tientsin, opens up rich coal areas, *e.g.* between Taku and Shan-hai-kwan. Apart from the Manchurian system, the most important is the projected Canton-Peking line, parts of which are already open, *e.g.* some 200 miles north of Hankau *viâ* Hsin-yang, and some 300 miles south of Peking *viâ* Paoting. Elsewhere even cart-roads are rare.

Chapter 23. Provinces of China Proper.

1. Chili or Pechili is divided into two parts—that within and that beyond the Great Wall.

(1) The northern part is a mountainous waste ; the southern, *i.e.* practically the basin of the Pei-ho, is part of the great plain, and owes its importance to its fertility and to the political and commercial centres of Peking and Tientsin. (See p. 81.) Kaiping is a great coal centre.

2. Shansi, the "Western Mountains," is also divided by the Great Wall, but both parts are mountainous.

(1) The importance of the province lies in the—as yet undeveloped—mineral wealth. Cf. p. 76.

(2) The characteristic feature is a series of river valleys running parallel with the great southern trend of the Hwangho.

N.B.—For Taiyuen, see p. 82.

3. Shensi is divided into two parts by the Peling Mountains.

(1) The northern part contains the fertile basin and natural trade-route of the Wei. Cf. Singan, p. 81.

4. Kansu is a collection of loess-filled gorges, the soil and climate of which produce excellent tobacco.

(1) The capital, Lanchou (cf. p. 81), stands where the great North-Western road crosses the Hwangho, commanding the important bend in the river and the most fertile gorge.

5. Shantung, the "Eastern Mountains," includes the mountainous peninsula and the fertile surrounding plain.

(1) The mountainous character of its eastern portion gives it a supply of good harbours in the centre of an other-

wise harbourless shore; Chifu is a Treaty Port, and Weihaiwei and Kiau-chau are fine harbours very suitable for naval stations. Cf. p. 86.

(2) Tsinan, with rail to Kiau-chau, commands the plain. Cf. p. 83.

6. Honan consists of mountain valleys in the west and alluvial plain in the east.

(1) The town of Honan stands in the most fertile of the western valleys, while the capital of Kaifeng (cf. p. 82) commands the plain and the point where the great road from Peking to Hankow crosses the Yellow River.

7. Kiangsu owes its commercial importance to the estuary of the Yangtse, and its industrial importance to its soil and climate.

(1) The latter are very favourable to the growth of the mulberry, especially south of the river; and the silk is manufactured at Suchou and Nanking. Cf. pp. 81 and 83.

(2) Though Nanking is the capital of the province, its commercial importance is much less than that of Shanghai or Chinkiang, which commands the junction of the Grand Canal with the Yangtse. Cf. p. 82.

8. Kiangsi is practically the basin of the Poyang Lake, and is one of the chief tea-producing districts.

(1) Its capital, Nanchang, stands close to the shore of the lake at its summer level; but the most important place is Kingtechen, the chief centre of earthenware in China and the seat of the Imperial porcelain works.

(2) One of the most valuable species of tea, *Thea Bohea*, takes its name from the Bohea Mountains.

9. The neighbouring province of Hunan is practically the basin of the Tungting Lake.

(1) Its soil and climate, especially in the Siang valley, are well suited to various medicinal plants. Cf. Changsha and Siangtan, pp. 81 and 82.

10. Hupe consists mainly of the plains of the middle Yangtse, and has great commercial and agricultural importance.

(1) The commercial importance centres in Hankow (cf. p. 80), which is the centre of a very dense population, divided between Hankow proper, Wuchang, and Hanyang; but Ichang, the head of navigation for large steamers, is also important. Hanyang has busy iron-works.

(2) The agricultural interest centres in Shasi, the chief cotton market of Central China.

11. Sechwan also has both commercial and agricultural importance.

(1) The commercial importance centres partly in Chungking, the head of navigation for small steamers (cf. p. 82), and partly in the great trade-route westward to Lhasa.

(2) The agricultural importance depends partly on the rich soil of the Red Basin, as it is called, and partly on the facilities for irrigation.

N.B.—The Yangtse here generally goes by the name of Kinsha-kiang, 'The Golden-Sand River.'

12. Yunnan, like Shansi, owes its importance mainly to its—as yet undeveloped—mineral wealth, especially in copper.

(1) The lake-port of Yunnan commands the trade with Tongking, as the lake-port of Tali commands the trade with Burma.

(2) To the south, the Song-ka valley produces the valuable Puerh tea, which fetches the highest price of all teas used by the Chinese, and large quantities of opium.

13. Kwangsi and Kwangtung, 'West' and 'East' Kwang, are the basin of the Si-kiang river.

(1) The West is high and rugged, but both navigation and fertility begin at Wuchou; and even in the west mulberries flourish luxuriantly.

(2) Canton is the largest city in China (cf. § 1 below), and was the first to enter into regular relations with Europeans. Cf. the position of Macao (Portuguese) and Hong-kong.

14. The rich tea-growing province of Fokien is mainly the basin of the Min, which drains from the Bohea Mountains. Cf. § 8 above.

(1) The bold indented coast supplies some excellent harbours, especially Amoy and Fuchou. Cf. p. 81.

15. Chekiang is a very similar province with similar products.

(1) The best harbours are Hangchou, Ningpo, and Wenchou. Cf. pp. 81 and 82.

Chapter 24. Towns.

1. Historically, Canton and Hankow have been the most important centres, Canton being slightly the larger.

(1) It stands at the west of a line of hills, commanding all the trade of the densely-peopled Kwang-tung province, with navigation for ocean vessels up the Canton or 'Pearl' river to the heart of the city, and for river steamers up the Si-kiang or 'west' river, up the Tung-kiang or 'east' river, and up the Peiho or 'north river. In olden times, it was also the only Treaty Port, and is still the chief silk port. (Cf. Kwang-si mulberries). About 300,000 of its inhabitants live in boats.

N.B.—*Ho* is usually the word for river in the north of China, *kiang* in the south; but 'Pei-*ho*' seems appropriate for a 'North' River.

(2) Hankow, with its twin city of Wuchang, commands one of the greatest waterway junctions in China—where the confluence of the Han beneath the hills which form the Hwangho-Yangtse water-parting, helps to cause the great S.E. sweep on the Yangtse. It is the chief tea port, and the railway to Pekin increases its importance.

2. Commercially, Tientsin and Shanghai are the most important centres, Shanghai having much the largest total trade, while Tientsin has the largest foreign imports.

(1) As the port of Peking and the northern terminus of the Imperial Canal, Tientsin was naturally one of the most important Treaty Ports, even before the introduction of railways; and it has been the natural centre of railway activity in China, though it has now a very formidable rival in Hankow.

(2) Shanghai is the busiest of all the Treaty Ports, as being the great entrepôt for all Northern China. This is due to the fact that, although it is not on the Yangtse but on the Wusung, it is the outlet for the whole Yangtse valley. Its commanding position has also made it the chief arsenal of the country. It has rail to Suchou.

N.B.—The low muddy shores of the Yangtse estuary afford no site for a great port, cf. the Amazon (Para=Shanghai).

3. Hangchou, Fuchou, and Suchou are Treaty Ports of second rank.

(1) Hangchou—the *Quinsay* of Marco Polo—is the southern terminus of the Imperial, or Grand, Canal, and is the largest of the three; but the sea-approach is rendered dangerous by violent 'bores.'

(2) Fuchou, at the mouth of the Min, is the centre of all the coastal trade, especially in black tea. (Cf. the Fokien tea-gardens.)

(3) The canal port of Suchou is one of the chief silk markets.

4. Changsha, Chungking, Ningpo, and Nanking are Treaty Ports of third rank.

(1) Changsha owes its importance to its command of the richest lowlands of the Tungting basin, and of the Siang valley route from the Yangtse to Canton.

(2) Chungking, at the confluence of the Kialing with the Yangtse, is the natural link between the Sechwan highlands and the Yangtse lowlands.

(3) Ningpo is a port for the great silk district of Che-Kiang. It was also the headquarters of the British fleet in the war caused by the introduction of Indian opium into China; since then it has become the centre of Protestant missions.

(4) Nanking commands the last defile through which the Yangtse flows; the strategical position on the edge of the hills made it once the capital of China, and the commercial position on the river in the middle of a great silk district made it once the largest city in the world. It gave its name long ago to *Nankeen* (cotton).

5. Amongst the smaller Treaty Ports are Chinkiang, Amoy, Shasi, Chifu, Wuchou, and Swatow.

(1) Chinkiang is the most important river and canal junction in the whole country, and occupies the lowest place on the Yangtse which is at all appropriate for a great harbour.

(2) Amoy, in the rich tea-growing province of Fokien, has the best harbour in China, commanding the traffic with the fertile island of Formosa, "The Beautiful," and with good coal at Kelung.

(3) Shasi is the chief cotton market in Central China.

(4) Chifu commands the southern entrance to the Pechili Gulf, as Port Arthur commands the northern.

N.B.—For the political and strategic importance of this position, cf. Weihaiwei and Kiau-chau.

(5) Wuchou is the head of navigation for river steamers on the Si-kiang, and the outlet of the long river-plain of Kwang-si.

(6) Swatow, though smaller even than Chifu and Wuchou, has the advantage of being an outlet for the fertile Kwang-Tung province,

6. The most important of the Non-Treaty Ports are Peking, Siangtan, Chengtu, and Si-ngan.

(1) Peking was the capital of a kingdom as early as 1100 B.C. It stands on a dreary sandy plain, exposed in winter to cold dust-laden winds; but it has a good strategical position, as it commands the Nankow Pass into Mongolia *via* Kalgan or Changkiakou, the route through the Kupei-kou Gate in the great Wall to Chengte or Jehol, and into Manchuria *via* Shanhaikwan ('Mountain seagate')—a most appropriate name for a narrow pass between the precipitous cliffs and the Liau-tung gulf. It is within easy reach of good coal.

(2) Siangtan is the centre of a great drug-growing region—a guarantee of prosperity amongst the Chinese, who are particularly fond of taking medicine, and have an ingenious plan of paying their doctor only *so long as they are well.*

(3) Chengtu is a beautiful town on a fertile plain in the healthy highlands known as the Red Basin—from its rich red soil—where numerous tributaries converge on the Yangtse, making irrigation so easy and so obvious that it has been in use for 2000 years. Cf. p. 79.

(4) Si-ngan commands one of the very few really good routes from east to west—*i.e.* the 'impenetrable' heart—across northern China.

7. Of the less important towns, Lanchou, Taiyuen, Kaifeng, and Tsinan have the largest populations.

(1) Lanchou is a great tobacco-centre on the chief N.W. trade-route along the upper Hwangho. Cf. Si-ngan.

(2) Taiyuen commands the central and widest valley of a series of parallel valleys running from north to south in Shansi ('West Mountains').

(3) Kaifeng, the capital of Honan, where delta and valley meet (cf. Cairo), overlooks the scene of all the most destructive floods on the Hwangho.

(4) Tsinan commands the rich, densely-peopled slopes from the Hwangho delta-plain to the highlands of the Shantung peninsula, with rail to Tsingtau.

Chapter 25. The Chinese Dependencies.

1. Manchuria is a fertile plain shut in by the Khingan and Shan Alin or 'Long White (-limestone) Mountains,' with convenient political boundaries in the Amur and the Ussuri.

(1) Mukden the capital of the Shengking province, commands the 'neck of approach' up the Liau valley from China, and has a Treaty *Port* in Niuchwang, with its harbour at Ying-kau.

(2) Tsitsihar, the capital of the Helungkiang province, is at the head of navigation on the Nonni; and, as long as the Amur is unfrozen (June to November), there is excellent navigation to Aigun.

(3) Girin—often misspelt *Kirin*—at the head of navigation on the Sungari, is the capital of the whole country and of the Girin province; but it is not nearly so important as the great junction of Harbin, where the *Central Manchurian* link in the *Trans-Siberian Railway* crosses the Sungari, and joins the *Chinese Eastern Railway* from Port Arthur and Dalny.

N.B.—The special products of the country are beans and dogskins.

2. Mongolia is a dry dreary plateau, occupied by scattered tribes of herdsmen.

(1) It is divided by the Altai ranges into two fairly equal areas, and an enormous proportion of both is filled up with the Gobi ('great') or Shamo ('sand-sea') desert, the Ordos corner being the most desolate.

(2) Two trade routes run across the northern area from Peking *via* Kalgan—to the chief town, Urga, and the frontier market, Maimachin ('Trade City'), for Kiakhta and Irkutsk, and to Uliasutai and Kobdo.

N.B.—The people are ground down by the debased Lama tyranny.

3. Like Mongolia, Eastern Turkistan is divided into two areas by a mountain range—the Tian Shan, or 'Celestial Mountains'—and includes a large area of desert—the Tarim.

(1) The small northern area—Zungaria—gives the easiest overland route from China to Europe, *via* Barkul, Urumtsi and Kulja.

(2) In the much larger southern area—Kashgaria—all the cities are situated on irrigated oases, either on the banks of streams from the encircled mountains, *e.g.* Kashgar, Yarkand, Khotan, Karashar, or round wells, *e.g.* Kanchew, Ansifan, Hami.

(3) Kashgar, on one of the chief head-streams of the Tarim, with the Terek-davan and Terek-ti passes behind it, commands the trade with Russian Turkistan; it is also the political capital, and weaves cloth out of the very fine wool. Yarkand, on the other chief head-stream of the Tarim, commands the Karakoram pass into Kashmir, and—like Khotan—has valuable deposits of jade.

4. The dreary lake-strewn, mountain-ribbed plateau of Tibet is the highest continuous area on the face of the earth; it is also the most priest-ridden.

(1) The bulk of the people live in the Sanpu or Upper Brahmaputra valley, where a little agriculture is possible; and the capital Lhasa ('God's Throne') stands on the north, *i.e.* the sunnier, slope of the valley. Gyantse, the second largest town, stands on the south slope, on the natural route from Darjiling, *via* Chumbi and Tuna, to Lhasa or Shigatse.

(2) There are numerous lakes, many of them quite large enough to have a distinct effect on the climate, *e.g.* Kuku Nor; and their 'land and sea breezes' are utilised by the superstitious but lazy Tibetans, *e.g.* on the shores of the two sacred Manasarowar lakes, to turn their 'meritmaking' prayer-wheels.

(3) The wealth of the country is chiefly in wool or hair from the yak, the goat, the native sheep, but musk, rhubarb, gold, borax, and salt are also exported. Yatong is the most important frontier market.

***N.B.*—The plateau has an average height of 15,000 (Mont Blanc).**

5. The European possessions in China are quite small, but have considerable political and commercial importance, Hong-Kong being much the most important commercially.

(1) Hong-Kong, or 'Sweet Water,' is a granite rock about the size of Holyhead Island; but, with the British strip of Kowlun on the mainland, it shuts in one of the most magnificent harbours in the world—Victoria. Its only export is granite; but its annual entry and clearing of shipping amount to 14,000,000 tons, its annual trade is valued at nearly £50,000,000, and its political is nearly as great as its commercial importance.

(2) The neighbouring island of Macao has belonged to Portugal since the year 1586. It is a centre of the opium trade *via* the Si-kiang valley from Yunnan, the chief poppy-growing province; and, like the dependent islands of Taipa and Coloane, it has an important fishing industry. France has recently acquired a footing on the Lien-Chau peninsula. Cf. p. 72.

(3) The British possession of Weihaiwei and the German naval station of Kiau-chau are both good harbours, with a healthy climate, occupying an obviously valuable strategical position, which is guarded on the north by the Japanese naval station of Port Arthur and 'free' port of Dalny ('Far Away') on Talienwan Bay.

N.B.—The termination *-fu* or *-hien* often added to the name of a Chinese town, *e.g.* Singan-*fu* or Shanghai-*hien*, merely indicates the status of the town.

KOREA.

Chapter 26.

THE rich valleys of Korea (the land of 'Morning Calm'), with their peninsular climate, mark the transition, in political development as well as in geographical features, from China to Japan.

(1) The coast-line resembles somewhat that of Great Britain—being bold and rocky towards the ocean (E. side), but low and sandy towards the continent—with heavy tides on the west and light ones on the east, and with a number of adjacent islands, *e.g.* Quelpart, which breeds ponies, and Port Hamilton, a great fishing-station. Cf. the Shetlands.

(2) The harbours are well distributed. Wonsan (Gensan), with a possible naval station in Port Lazaref, controls the fishing industry of Broughton Bay and the export of gold; Fusan, with a fine naval station in Masampo, controls the trade with Japan, and cuts off Port Arthur from Vladivostok; towards the continent the chief ports are at the mouths of the chief rivers—Chemulpo (Jinsen) on the Han, Chinampo on the Taidong, and Yongampo on the Yalu.

N.B.—Kunsan and Mokpo are at the mouths of smaller rivers.

(3) The surface also has some resemblance to that of Great Britain—being about the same size, and having a water-parting running down it from N. to S., much nearer the ocean coast than the continental (W. side).

(4) The frontier river, Yalu, drains from the densely forested Paik-to-san (Long White—*pumice*—Mountain) through a valley which—under the heavy monsoon rains (June to September)—produces enormous crops of beans; and it is navigable from above the Treaty Port

of Wiju and its Manchuria *vis-à-vis* of Antung; but the Tai-dong has better navigation, and drains a richer area, especially round the Treaty Port of Ping-yang, a famous bean and rice market, and an old capital of the country. The Han is, however, the most important river, mainly because it rises within about 30 miles of the east coast, and so its valley provides a natural route (160 miles) across the country; its estuary is also the natural outlet for the famous ginseng root of Songdo.

(5) Owing to the ravages of Japanese pirates round the coast and incursions of the warlike Manchus from the north, very few towns survived along the coast, and an artificial 'desert' was constructed along the Yalu-Tumen frontier; and all the chief centres came to be formed along the one great through-route from Fusan to Wiju *via* Taikiu, Chung-ju, and Seoul—Songdo, Ping-yang, and Anju. Seoul, the natural centre of this route, embosomed in hills, and commanding the transverse Han-valley route, is the modern capital.

(6) The country is essentially agricultural at present; but it is certainly rich in minerals, especially coal and gold, its rivers team with fish, and its well-watered eastern highlands are densely timbered. The special products are ginseng and timber (both exported to China), beans and rice (both exported to Japan), and all kinds of fibres, tobacco and hemp being most important; very excellent paper is manufactured out of cotton and mulberry fabrics, and fine furs come from the northern forests.

(7) Before the Russo-Japanese war, the only railway in the country was a 30-mile line from Seoul to Chemulpo; but on the outbreak of war the Japanese at once proceeded to complete the line, already projected and surveyed, from Fusan to Wiju *via* Seoul. It follows the general direction of the old road, but avoids the deviations from the coast.

JAPAN.

Chapter 27.

1. The Empire of Japan or Nihon ('Rising Sun') is rather larger than the United Kingdom, but resembles it in several ways:—*e.g.*

(1) As a group of islands, one of which is much larger than the rest. Besides the Honshu or 'Main Island' and its immediate neighbours, the Empire practically includes all the islands between the Philippines and Kamchatka, Formosa being specially valuable.

N.B.—The Japanese portion of Sakhalin was given to Russia in 1875 in exchange for the Kuriles or Chishima islands.

(2) As an island group lying to windward of a populous continent, with a number of splendid harbours and abundance of coal and iron.

2. The mass of the country (30°-45° N.) is very mountainous and largely of igneous origin.

(1) The chief peak is the beautiful cone of Fuji-san (12,400 feet)—often miscalled Fusi-yama; the chief range runs down Honshu from N.E. to S.W., presenting a full face to the S.E. monsoons; a number of the volcanoes are still active, *e.g.* Aso-san, and are surrounded by hot springs; and various spurs from the main range descend precipitously into the deep Pacific waters, forming magnificent harbours of refuge.

(2) The height of the mountains and the narrowness of the country cause the rivers to be little more than torrents, very few being navigable (cf. New Zealand); and their great force and the friable nature of the volcanic soil cause them to carry down immense quantities of alluvium—to the great detriment of some of the harbours, including those of Tokyo, Osaka, and Niigata.

(3) The mass of the igneous rock cooled slowly deep down

below the surface of the earth, and now appears upheaved as infertile granite (rich in copper and kaolin); the volcanic rock—which, of course, cooled quickly above the surface of the earth—is much less widely spread, but gives a typical character to the scenery.

(4) Both the chief volcanoes and the line of the constant earthquakes are located along the 'Great Ditch' which divides Honshu from the Noto to the Kadsusa peninsula; Fuji-san and Tateyama form the two ends of the series of peaks, while the line of earthquakes runs specially through Nagoya and Gifu.

(5) Outside the igneous area there is old sedimentary rock, such as naturally contains coal and petroleum.

3. The climate of the chief islands depends on their nearness to the great continent of Asia and to the Kuro Shiwo or 'Black Stream.'

(1) As all the south coast and part of the west coast are washed by the warm waters of the Kuro Shiwo, the fall of rain and snow must be considerable; but, as the prevailing wind is northerly in winter and southerly in summer, the warm current does not influence temperature much.

(2) The meeting of the warm current with the cold Kurile current causes dense fogs, especially off the E. of Yezo and N.E. of Honshu; and the change of monsoon farther south is accompanied by dangerous typhoons. The effect of the cold current is also seen in the frozen harbours of Yezo, and in the low average temperature in the larger islands compared with islands in the same latitude off Europe, *e.g.* the Azores.

(3) The climate, of course, changes with the latitude—to almost arctic extremes in the Kuriles, and to tropical extremes in Formosa; but in the four main islands the contrast of dry cold and moist heat has valuable results—the former bracing the people and pulverising

and cleansing the soil, while the moist heat guarantees a sure reward to agriculture. The humidity in the south-east is very favourable to texile industries, which are further facilitated by the abundance of coal and water power and the low wages of labour.

4. Both the mineral and the vegetable products are very valuable.

(1) The characteristic minerals are copper, sulphur, and kaolin, the Ashio copper mines near Nikko being the largest in Asia; but coal and iron are also important, the coal especially in Kyushu and Yezo, and there is a petroleum industry in the province of Echigo.

(2) The possession of coal and iron has helped the rapid development of railways, the Yezo coal being very convenient for Aomori, the northern terminus of the trunk system. The numerous river valleys have also facilitated railway-construction across the country, *e.g.* from Tokyo to Niigata and from Kyoto to Kanazawa. Wakamatsu has great foundries.

(3) The characteristic vegetation includes gigantic cedars, the camphor laurel, the lacquer tree, and the chrysanthemum; but the most important economic plants are rice in the central lowlands, tea in the central highlands, and mulberries in the provinces of Shinshu, Kotsuke, and Koshu.

N.B.—The monsoon climate and the abundance of river water for irrigation account for the excellence of the rice.

(4) The soil and climate encourage only a rank vegetation, *e.g.* of bamboo, amongst which meadow grasses have no chance, so that there is practically no pasture,—which accounts for the curious absence of such home products as wool and leather. On the other hand, the typical vegetation and the climate are peculiarly favourable to such creatures as the silk-worm ('The Honourable Mr. Baby').

There are many large animals, *e.g.* bears, boars, stags, etc., in Yezo, where they are hunted by the hairy Ainus; but elsewhere the people are all either gardeners or skilled artisans, especially in lacquer and metal work.

N.B.—Much of the lacquer and other ware is inlaid with mother-of-pearl and tortoise shell, the Kuro Shiwo being very favourable to turtles and oysters.

(5) Camphor and tea from the forested eastern highlands of Formosa, and sugar and rice from the alluvial western plain, are exported from Kelung, Tamsui, Anping, Takao.

N.B.—Very good coal and gold are found near Kelung.

5. Most of the larger towns (Kyoto being an exception) derive their prosperity from their command of comparatively wide and exceedingly fertile plains.

(1) Tokyo (about 1,840,000 inhabitants) stands on the banks of the Sumida-gawa, which drains the largest plain in the empire; it has no harbour, but has rail to Yokohama and to the petroleum port of Niigata at the mouth of the Shinano river. The typical industries are lacquer work and matches.

(2) Osaka (about 1,000,000), the 'Venice of Japan,' on the shore of a beautiful archipelago, has used the water-power of the Yodo-gawa from the great L. Biwa to make itself the chief centre of cotton-spinning; it has also a shipbuilding industry, but much of its trade goes by rail through the double port of Hyogo-Kobe.

(3) Kyoto (over 380,000), which is also supplied with water from L. Biwa, is in the centre of the best tea district and one of the best silk districts. The capital was removed from here to Tokyo only on the fall of the old Shogunate, or Military Tyranny, in 1868, when the name *Tokyo* ('Eastern Capital') was given to the old fishing-centre of *Yedo* ('Estuary-mouth').

(4) Nagoya (290,000), on a large and fertile 'rice-plain,' is the largest city on the Tokaido Railway, which joins

the modern to the ancient capital; its characteristic industry is porcelain, for which the neighbouring village of Seto is very famous.

(5) Yokohama (325,000) and Kobe (290,000) are the great harbours,—Kobe having the richer country behind it, but Yokohama having the dense population of Tokyo.

(6) Nagasaki (150,000) has, however, the finest harbour of all, with the excellent coal of Takasima at the entrance of its landlocked bay; and Hakodate has a similar position, with excellent coal and a landlocked harbour, in Yezo. Nagasaki has important shipbuilding yards.

N.B.—There is a very important fishing industry, occupying some 2,500,000 persons and nearly 400,000 boats; Sendai is the chief fish market.

(7) Hiroshima (120,000) became suddenly famous in 1894-95 as the central military camp during the Chino-Japanese war, which resulted in the annexation of Formosa (with the Pescadores).

6. Most of the smaller towns are concerned with the 'hand'-production of 'luxuries' or the 'machine'-production of 'necessaries.'

(1) The 'luxuries' *e.g.* lacquer and porcelain, are made in such towns as Kagoshima, Shizuoka, and Yonezawa; straw-braid is a special product of Okayama, and drugs (for China) of Toyama ('Little Yedo'), as sugared-plums—or, rather, grapes—are of Kofu.

(2) The textiles are mainly of silk, silk underwear being practically a necessity in such a climate; Kanazawa, Wakayama, and Fukui are important centres.

ASIATIC RUSSIA.

Chapter 28.

THE Russian sphere of influence in Asia extends from the Caspian to Behring Strait and the Sea of Okhotsk, and from the edge of the Central Plateau to the Arctic Ocean.

(1) The sub-divisions of this huge area are mainly river-basins—one of inland and four of oceanic drainage; and the general slope from S.E. down to N.W. makes all the important rivers except one flow from the S.E.

(2) The Turan or Aralo-Caspian inland drainage area is very low—in some places below sea-level—and both its lakes and its rivers are drying up, although the Amu Daria flows from the Pamir, and the Syr Daria from the Tian-shan. A large part of the area is steppe, but there are also real deserts, extending *e.g.* over half Turkistan. The largest lake, Aral, "The Islets," which is nearly as large as Scotland, is brackish; L. Balkhash is not much less. Cf. Caspian Sea.

(3) The oceanic or Siberian drainage area is naturally divided into two parts—a western or lowland, and an eastern or highland. The west is so low and level that marsh water flows indifferently into the Ob or the Yenisei according to the direction of the wind.

Along the north there is the expanse of ever-frozen tundra, caused partly by the flooding of the rivers, as the ice in their upper or southern courses melts long before that near their estuaries. Cf. p. 18.

The tundras give place to a belt of forest, which shelters innumerable fur-bearing animals; and, in the Ob basin, the belt of forest merges in fine grain-growing land. Transport can be had in the short summer over some 9000 miles on the Ob and its tributaries, of which the Irtysh is longer than the so-called main-stream. Cf. p. 50.

N.B.—The furs are sable, fox, marten, ermine, squirrel, etc.

(4) The eastern highlands are remarkable for the rich gold area round L. Baikal—the "Holy Sea" of the Mongols—the mammoth ivory along the Lena and in the Liakhov Islands, the Pacific drainage of the great Amur river, and the active volcanoes of Kamchatka.

The gold is specially rich in the Altai and Sayan mountains, from which there is easy transport in summer, *via* the Yenisei and its tributaries, of which the Selenga is longer than the so-called main-stream. Cf. the Irtysh.

The eastward course of the Amur gives it special importance for the expansion of Russia towards the Pacific; the ten Kamchatkan volcanoes are the only active ones in the Russian Empire; and L. Baikal is the largest and deepest area of fresh water in Asia.

N.B.—The Kamchatkan volcanoes are part of the chain which stretches from Alaska down through the Japanese islands to the East Indies.

(5) The climate is essentially continental, with very great extremes, which increase from west to east; the want of protection from N. winds and the want of access for S. winds make the cold intensely severe, and the wide expanse of low level causes atmospheric disturbances to spread with remarkable rapidity. Unfortunately, too, the reckless destruction of timber in the forest zone—the only protection along the north—is increasing the dryness.

(6) The special products include gold, ivory, fur, grain, and animals; and these are now collected by the Trans-Siberian and Trans-Caspian railways, though both are of even more strategic than commercial value.

The Trans-Caspian line runs from the port of Krasnovodsk to Tashkent and to Kushk, with an important junction near Merv; the Trans-Siberian line runs from Samara to Vladivostok *viâ* Irkutsk and Stretensk.

(7) The political and commercial capital of Russian Central Asia is Tashkent (156,000), on a fertile oasis which raises a great deal of silk, is the focus of an immense trading-area, and has a leather industry in connection with the surrounding steppe pasture.

Bokhara, like the old slave-market of Khiva, has only a shadow of its former glory, but it is still a natural trade centre between Persia and China, Russia and India; Kokan is a modern commercial centre commanding the upper valley of the Syr Daria, as Samarcand commands the fertile valley of the Zarafshan; Askhabad is a convenient political capital of the Turkoman district.

N.B.—The Zarafshan used to be a tributary of the Amu; but now, like the Murghab, it is entirely used up by irrigation.

In Siberia, Tobolsk has a characteristic site for an old capital—a rock at the confluence of two large rivers; Omsk is also a waterway junction, an important railway station, and a steppe market; Tomsk contains the one university of Siberia; Krasnoyarsk is the centre of the Yenisei-valley gold-mining; Irkutsk, the capital of Eastern Siberia and—thanks to the Polish exiles—the most intellectual town, is at present a terminus of the T.S.R., and will always be an important rail and lake junction.

Chita is the capital of Trans-Baikalia; Nerchinsk is the centre of the great mining district, including some mercury mines; Vladivostok is an extremely important railway terminus on a bay that is ice-free for almost all the year. Its prospects were clouded by the leasing of Port Arthur and Talienwan, which are always free from ice; but, with the loss of these ports to Japan, its prosperity must return.

N.B.—Caucasia, with its important cities of Tiflis and Baku, is—wrongly—included within the political boundaries of European Russia.

THE EAST INDIES.

Chapter 29. Climate and Vegetation.

1. The East Indies consist of two archipelagoes divided by 'Wallace's Line' from Lombok Island *via* the Macassar Strait to the S.E. corner of Mindanao.

(1) The islands to the N.W. of this line are said to be Asiatic; those to S.E. of it are said to be Australasian. All the N.W. islands are joined to one another and to the mainland of Asia by comparatively shallow water, and have the typical flora and fauna of Asia; but across the 13 miles of the deep Lombok Strait all is typically Australian.

N.B.—Out of 365 'Asiatic' kinds of birds found in Java and Borneo *only* 10 were found in Celebes; in Bali there were no opossums, cockatoos, or eucalyptus trees, and in Lombok there were no monkeys, woodpeckers, or bamboos.

(2) The climate is everywhere tropical—hot and damp, and the Philippines are also within the typhoon area; the soil is very largely volcanic, and—under the heavy and constant rainfall — vegetation is exceedingly luxuriant.

(3) Except the Philippines, British Borneo, and Portuguese Timor, the area is almost entirely Dutch.

2. As in the West Indies, almost all the islands are mountainous, but have low coast plains.

(1) The mountains, as in the West Indies, run generally east and west—except in the Philippines; and their height varies up to 10,000 feet in the Philippines and 12,000 in Java.

(2) A chain of active volcanoes extends through the Philippines, along the Macassar Strait, and right through the Sunda Islands.

(3) The Thousands Islands, like the Bahamas, are entirely of low coral formation.

3. As in the West Indies, again, all the large islands are in the Tropics, but have their tropical heat modified by their relief and position.

(1) More than half of all the islands, and more than three-quarters of most of them, is at least 700 feet above the sea; and the mountains provide innumerable sites for sanatoria.

(2) The daily sea-breezes and the periodical Trades and Monsoons give great relief from the equatorial heat, and the clouds are a protection from the actual sun-heat in the wet seasons.

(3) The proximity to the equator and the height of the mountains cause the rainfall to be very heavy and the wet seasons to be very long.

4. The soil is very fertile almost everywhere, partly from its nature and partly by accident.

(1) Most of it is of volcanic origin, and therefore needs only heat and moisture to make it enormously productive.

(2) In most of the islands, too, there is an immense accumulation of potash in the soil—in the form of vegetable refuse.

5. The hilly character of the islands aids the heavy rainfall to increase the natural fertility of the volcanic soil.

(1) The rain washes down to the roots of the plants a large quantity of the carbonic acid, ammonia, and nitric acid of the atmosphere.

(2) The porous volcanic soil sucks in the water before it can escape in surface floods.

(3) The general slope prevents the water so absorbed from stagnating round the roots of the plants, and facilitates artificial drainage.

6. With such a soil and climate, the vegetation is naturally very luxuriant, and includes almost all tropical plants.

(1) Sugar has hitherto been the great staple, but the industry has been affected by the competition of beet-sugar, especially from Germany and France, where heavy bounties promote the export artificially.

7. Sugar is, however, a natural product of the soil and climate; it needs great heat and moisture, it is not injured by sea-winds, and it grows best on low alluvial deposits of volcanic soil where there is also lime.

(1) Java produces more cane-sugar than any other country in the world except Cuba, and the Philippines and Sumatra also produce large quantities.

8. Tobacco has ranked next to sugar in the past; but it, too, is becoming of relatively less importance, and the recent political troubles in the Philippines have affected the industry.

(1) The plant requires a light sandy loam, very rich in lime and vegetable refuse; and the climate must combine considerable humidity with lowland heat.

(2) The best cigar-leaf has hitherto been grown in the Philippines (Luzon and Bisaya), and Manilla is famous for its cigars; but good tobacco is grown in some of the other islands, especially Borneo and Sumatra.

9. In recent times, coffee has become the chief rival of the sugar and tobacco.

(1) It requires great heat and moisture, with height and protection from storms.

(2) As it is grown so largely for export, the plantations should be as near the sea as possible, *e.g.* on an island where the mountains hug the sea shore.

(3) Java produces the largest amount, but the best quality comes from Timor and Celebes.

N.B.—Java and Madura also produce tea.

10. The other characteristic products include spices, drugs, and various palms.

(1) The Moluccas or 'Spice Islands' produce cloves, nutmegs, and cardamoms; and Borneo and Sumatra produce pepper.

(2) Quinine comes from Java, and camphor from Borneo and Sumatra.

(3) The sago palm grows in all the hot swamps, and the coco-nut round all the coasts.

Chapter 30. Political Divisions.

1. The Philippines have a total area about the same as that of the United Kingdom.

(1) Luzon is the most fertile, as well as the largest island; and, like Panay, it produces sugar and tobacco. Panay also produces hemp; and its neighbours, Zebu and Samar, produce coal. More coal comes, however, from Mindanao, which also produces gold and mercury.

(2) Manilla, which gives its name to the hemp, is much the largest town (220,000), and occupies an appropriate site for a capital—the shores of a fine harbour looking towards the mainland of Asia.

2. The British area in 'Borneo' includes North Borneo, Brunei, Sarawak, and Labuan.

(1) It produces excellent camphor, tobacco, and coal—the latter from both Borneo and Labuan; coffee and pepper are also cultivated, and gold and diamonds are found. Such curiosities as edible-nests and sea-slugs are collected for the Chinese merchants. Sandakan and Kuching are the chief towns.

3. The greater part of Timor (with the dependent Larantuka district of Flores) belongs to Portugal.

(1) It includes Dilli, the best port in the island, and some exceedingly fine 'coffee' lands. Cacao, spices, and sandalwood also grow well.

4. The Dutch islands have very valuable exports of coffee and sugar, tobacco, tea, and indigo being also important.

(1) Though not the largest island, Java (=England) is the most important because it is the most fertile, the most densely peopled, the most highly cultivated; it is also the most volcanic. The only good port on the bold south coast is Tjilatjap; but on the low north coast, Batavia has a fine harbour at Tandjong Priok, the Soerabaya estuary is well sheltered by Madura and has navigation up the Solo river, and the dangerous roadstead of Samarang is the nearest port to the great native capital of Soerakarta.

N.B.—The island of Bali marks the east end of the submerged Asiatic plateau.

(2) As Sumatra (= nearly 4 Englands) has its narrow mountain chain running close along the S.W. coast, there is room for large placid rivers on the N.E. plains. Its special products are tobacco, *e.g.* from Deli and Ranau; black pepper, *e.g.* from Telok-betong; coal from behind Padang; gold from round Jambi and Palembang (the largest town, 50,000); and immense quantities of tin from the dependencies of Banka and Bileton.

N.B.—Telok-betong suffered severely from the sea-wave caused by the bursting of Krakatoa.

(3) As Borneo is crossed by the equator, it has, like Sumatra, 'two sets of seasons'; but, unlike Sumatra, it has no volcanoes. It has a large amount of low level land threaded by navigable rivers and covered with rice. Dutch Borneo (= France) exports tobacco, sugar,

pepper, birds' nests, sea-slugs, and gutta-percha—the last mainly from the large port of Pontianak. The chief town, Bandjermassin, has about 45,000 inhabitants.

(4) As the island-tipped peninsulas of Celebes are almost as mountainous as the central mass—'the body of the star-fish'—it is still comparatively unexplored, and the only parts effectively occupied are the Macassar and Minahassa peninsulas. Its special products are macassar oil (a tree sap), tortoise-shell (really turtle-shell), sea-slugs, pearls, spices, and coffee; but its height makes it so healthy that the Dongala district is even famous for horses. Macassar is the most important native mart in the whole archipelago.

N.B.—The Minahassa coffee is exported from Menado during the east monsoon, but from Kema during the west.

(5) The Moluccas, or Spice Islands, are traversed by the great volcanic chain of the archipelago, many of the islands being volcanic cones, while others are coral reefs. The Amboyna group is famous for cloves, and the Banda group for nut-megs; Ceram exports sago; and the Australian character of the group is marked by the presence of, *e.g.* kangaroos.

N.B.—Compare the shape of Gilolo with that of Celebes.

(6) The proximity of the Lesser Sunda islands to the heated interior of Australia makes them very dry, horses and sandalwood again appearing as products, *e.g.* in Sumbawa and Sumba.

(7) The Dutch area of New Guinea, though it is larger than the British and German areas taken together, is almost an unknown land.

PROBLEM PAPER.

1. Discuss the probable history of India if the Deccan had lain to the north and Hindustan to the south of the tropic.

2. Compare the projected Kra Canal with the Suez Canal and the position of Ceylon with that of Crete.

3. What conspicuous changes must have taken place in the vegetation of Western Asia since the disappearance of the old Aral-Caspian arm of the Arctic Ocean?

4. What difference would it make to the climate of Siberia if a continuous line of high mountains ran across the tundras from the Yenisei to the Lena?

5. Illustrate the connection of race with climate, and of height with occupation.

6. What physical conditions have hindered the development of Asia in the past which may help it in the future?

7. Account for the importance of the Arabian desert in the history of religious movements.

8. Illustrate the circumstances which determine the position, growth, and characteristic industries of an important town.

9. Compare the position of the United Kingdom with that of Japan, and show what difference it would make to both if the earth rotated from east to west.

10. Compare the political and economic value of the various European 'spheres of influence' in Eastern Asia.

11. Explain the danger to a country of having a single food-staple (cf. the potato in Ireland), and suggest alternatives to rice.

12. What parts of Asia would be most benefited by means for producing rain artificially? How, and why?

13. Suggest reasons for the superiority of the Japanese over the Chinese.

14. How far have geographical conditions favoured the predominance of Russian influence in the north of Asia and of British influence in the south?

15. What will be the probable results of the gradual desication of Central Asia?

16. Estimate the influence of rivers in concentrating people and products at great distributing centres.

17. Contrast the natural advantages of some typical 'Buffer States' with their present economic position, and try to account for the disparity.

18. Discuss the geographical propriety of the following names—Himalayas (*Abode of Snow*), Kamchatka (*Land's End*), Anatolia (*Sunrise*-land), Amur (*The Great* River), Aral (*Sea of Islets*), Nilgiris (*Blue* Mountains), Irawadi (*Elephant-river*), Tigris (*The Swift* River), Nanking (*South Capital*), Taku (*Big Mouth*), Hupë (*North of the Lakes*).

APPROXIMATE POPULATION OF SOME IMPORTANT TOWNS.

Tokyo,	1,440,000.
Calcutta,	1,120,000.
Canton,	850,000.
Hankow,	
Bombay,	770,000.
Tientsin,	700,000.
Hangchow,	
Fuchou,	650,000.
Shanghai,	620,000.
Madras,	500,000.
Suchou,	
Haidrabad,	450,000.
Bangkok,	(?) 350,000.
Kyoto,	350,000.
Manilla,	300,000.
Lucknow,	260,000.
Ningpo,	255,000.
Tehran,	250,000.
Nagoya,	245,000.
Singapore (island),	230,000.
Rangoon,	
Damascus,	225,000.
Nanking,	
Kobe (Hyogo),	220,000.
Delhi,	210,000.
Benares,	205,000.
Cawnpur,	200,000.
Smyrna,	
Victoria,	
Yokohama,	195,000.
Agra,	188,000.
Mandalay,	183,000.
Tabriz,	180,000.
Allahabad,	176,000.
Amristar,	160,000.
Bangalore,	
Jaipur,	
Tiflis,	
Tashkent,	156,000.
Colombo,	150,000.
Hanoi (villages),	
Soerabaya,	
Baghdad,	145,000.
Aleppo,	130,000.
Batavia,	120,000.
Beirut,	
Hiroshima,	
Ispahan,	80,000.
Mecca,	60,000.
Samarkand,	55,000.
Irkutsk,	50,000.
Erzerum,	45,000.
Jerusalem,	
Vladivostok,	30,000.

N.B.—Comparisons between the populations of Asiatic and European cities have been omitted, as the conditions of native life are apt to make them misleading.

INDEX OF CHIEF PLACES.

Abbreviations: c. = cape, g. = gulf, i. = island, l. = lake, m. = mountain, r. = river.

Adalia (Attalia), 35.
Adam's Bridge, 68.
Adam's Peak, 68.
Adána, 37.
Aden, 5, 41.
Afghanistan, 34, 44.
Agra, 65.
Ahmedabad, 66.
Aidin, 37.
Aigun, 84.
Akabá Gulf, 18.
Akyab, 8.
Aldan, r. 13.
Aleppo, 39, 40.
Alexandretta, 38.
Allahabad, 65.
Alma Dagh, m. 39.
Altai Mts., 10, 15, 93.
Ambala, 57.
Amboyna, i. 102.
Amoy, i. 83.
Amraoti, 60.
Amritsar, 65.
Amu Daria, r. 17, 94.
Amur, r. 19, 95.
Anatolia, 35-37.
Andamán, i. 69.
Angara, r. 13.
Angora (Ancyra), 30, 36.
Ankor, 72.
Annam, 71.
Anping, 92.
Ansifan, 84.
Anti-Lebanon, m. 40.
Anti-Taurus, m. 36, 37.
Apple Tree (Yablonöi) Mts., 10.
Arabia, 40-42.
Arakan, 63.
Aral, l. 17, 94.
Ararat, m. 35.
Aras, r. 43.
Arcot, 67.
Argœus, m. 37.
Argun, r. 13.
Argundab, 45.
Armenia, 40 (cf. 37).
Ashio, 90.
AsiaMinor = Anatolia, 35-37.
Aso-san, m. 89.
Assam, 59.
Assyria, 38.
Atrek, r. 43.
Attalia (Adalia), 35.
Australian Islands, 97.

Bab-el-Mandeb Strait, 6.
Babylonia, 38.
Baghdad, 38.
Bahrein, i. 7, 41.
Baikal, l. 12, 95.
Baku, 16.
Bali, i. 4, 97.
Balkhash, l. 12, 94.
Baluchistan, 45.
Banda, i. 102.
Bandar Abbas, 43.
Bangalore, 65.
Bangkok, 70.
Banka, i. 101.
Basra, 38.
Batavia, 101.
Batum, 16.
Behar, 55, 58.
Beirut, 39, 40.
Bellary, 67.
Benares, 64.
Bengal, 58.
Berar, 60.
Bering Strait, 3, 23.
Bhamo, 51.
Bhutan, 33.
Bileton, i. 101.
Biwa, l. 91.
Black Stream = Kuroshiwo, 23, 90.
Bokhara, 96.
Bolan Pass, 48.
Boloven, 71.
Bombay, 46, 61, 64.
Borneo, i. 100, 101.
Brahmaputra, r. 51.
BritishPossessions, 33, 46-69, 85, 86, 100.
Brunei, 100.
Brûsa, 37.
Burma, 63.
Bushire, 43.

Cæsarea = Kaisariyeh, 37.
Calcutta, 47, 59.
Calicut, 62.
Cambodia, 71.
Cancer, or North Tropic, 26.
Candia = Crete, 35.
Canton, 80.
Capricorn, or South Tropic, 26.
Carmel, m. 39.
Caspian Sea, 10, 12.
Caucasus, m. 16.
Cawnpur, 58.
Celebes, i. 100, 102.
Ceram (or Serang), i. 102.
Ceylon, i. 68.
Chandernagore, 67.
Changsha, 82.

Chattisgarh, 60.
Chekiang, 80.
Chelyuskin, c. 3.
Chengte, 82.
Chifu, 83.
China Proper, 73-83.
Chinese Empire, 83-86.
Chinkiang, 83.
Chios, i. 35.
Chishima, =Kurile Islands, 89.
Chitral, 44.
Chittagong, 67.
Christmas Island, 69.
Chungking, 82.
Chutia Nagpur, 56.
Cochin-China, 71, 72.
Cocos (or Keeling) Islands, 69.
Coloane, i. 86.
Colombo, 68.
Crete (or Candia), i. 35.
Currents, Oceanic, 23, 90.
Cutch, Rann of, 61.
Cuttack, 67.
Cyprus, i. 4.

Dead Sea, 18, 39.
Deccan, 49, 59-63.
Delhi, 57.
Deli, 101.
Demavend, m. 11.
Desert of Gobi (or Shamo), 11, 84.
Diabekr, 38.
Diego Garcia, i. 69.
Dilli, 101.
Diu, 67.
Doab, 57.
Dorsal (or Stanovöi) Mountains, 10.
Dumao, 67.
Dushtistan, 43.
Dutch Possessions, 97.
Dzungaria = Zungaria, 84.

Eastern Ghats, m. 49.
Eastern Turkistan, 84.
'Eden, Garden of,' 18.
Elbruz, m. 10, 43.
Elephant River=Irawadi, 51.
Erzerum, 36, 37.
Esdraelon Plain, 40.
Euphrates, r. 9, 38.

Farra, 45.
Fars, 7.
Fokiën, 80.
French Possessions, 67, 71.
Fuchou, 81.
Fuji-san (or Fusiyama), m. 89.

Galle, Point de, 69.
Ganges, r. 19.
'Garden of Eden,' 18.
Gediz Chai (Hermus), r. 35, 37.
Genaon, 67.
Georgia, 32.
German Possessions, 86, 102.
Ghats, m. 49.
Ghazni, 45.
Ghogra, r. 50.
Girin, 84.
Girishk, 45.
Goa, 67.
Goalpara, 54.
Gobi Desert, 11, 84.
Godavari, r. 51.
Golconda, 64.
Great Wall of China, 73.
Gujarat, 61.
Gwadar, 45.
Gwalior, 66.

Hadramût, 41.
Haidrabad (Deccan), 61.
Haidrabad (Sindh), 58.
Haifa, 38.
Hainan, i. 31.
Haiphong, 71.
Hakodate, 92.
Halmand (or Helmand), r. 45.
Halys, r. 36.
Hamah, 39.
Han, r. 80.
Hang-chou, 81.
Hankow, 80.
Hanoi, 71.
Hari-rud, r. 45.
Hejaz, 42.
Herat, 45.
Hermon, m. 10.
Himalayas, m. 14, 48.
Hindu-kush, m. 15.
Hindustan, 49, 57-59.
Hiroshima, 92.
Hodeida, 41.
Homs, 39.
Honan, 78.
Hong-Kong (Hangkiang), 85.
Hué, 72.
Hugli, r. 46.
Hunan, 78.
Hupë, 79.
Hwang-ho, r. 20.
Hyderabad = Haidrabad, 58, 61.
Hyogo, 91.

Ichang, 75.
Iconium, 37.
Ili, r.
India, 46-67.
Indies, East, 97-102.
Indus, r. 50.
Inland drainage, 16, 17.
Ionian Islands, 3, 35.
Iran, 43-45.
Irawadi, r. 51.
Irkutsk, 95, 96.
Irtysh, r. 13, 95.
Isaphán, 44.
Iskanderun, 39.

Jabalpur, 60.
Jaffa, 39.
Jaipur, 66.
Jalalabad, 45.
Jamna, r. 13, 50.

Japan, 89.
Java, 101.
Jaxartes, r. 17.
Jebel Horeb, m. 6.
Jebel Musa, m. 6.
Jedda, 40.
Jerusalem, 39.
Jihun Gorge, 35.
Jordan, r. 39.
Judæa, 39.
Jumna=Jamna, r. 13, 50.

Kabin, 70.
Kabul, 45.
Kafiristan, 44.
Kaifeng, 82.
Kaiping, 76.
Kaira, 61.
Kaisariyeh, 37.
Kalgan, 84.
Kamchatka, 95.
Kamiah, 44.
Kanara, 62.
Kanazawa, 90.
Kanchew, 84.
Kandahar, 45.
Kandy, 69.
Kangra, 54.
Karachi, 47.
Karakoram Mountains, 10.
Karashar, 84.
Kashan, 44.
Kashgar, 85.
Kashmir, 56.
Kavari, r. 51, 54.
Keeling, or Cocos, Islands, 69.
Kelat=Khalat, 45.
Kelung, 91.
Kerman, 44.
Khaibar Pass, 48.
Khalat, 45.
Khasi, m. 59.
Khingan, m. 83.
Khiva, 96.
Khotan, 84.
Khulm, 45.
Kiakhta, 84.
Kiangsi, 78.
Kiangsu, 78.
Kiauchou, 86.
Kingtechen, 78.
Kinsha-kiang, r. 79.
Kinta, 71.
Kirghiz Steppes, 32.
Kirin=Girin, 84.
Kistna = Krishna, r. 51.
Kizil Irmak (or Halys), r. 36.
Kobdo, 84.
Kobë, 92, 93.
Kohat, 57.
Kokan, 96.
Kolar, 61.
Konia (Iconium), 37.
Konkan, 62.
Korat, 70.
Koréa, 87.
Koshu, 90.
Kotsuke, 90.
Kowlun, 73, 85.
Kra, 71.
Krasnoyarsk, 96.
Krishna, r. 51.
Kuching, 100.
Kuku-nor, l. 85.
Kulja, 84.
Kupei-kow Gate, 82.
Kurile (Chishima) Islands, 89.
Kurna, 38.
Kuro-shiwo, 23, 90.
Kurrachee = Karachi, 47.
Kushk, 95.
Kwangchow=Canton, 80.
Kwangsi, 79.
Kwangtung, 79.
Kwen-lun, m. 10, 14.
Ky̆óto, 91.
Kyushu, 90.

Labuan, i. 100.
Lahore, 57, 64.
Lakadivs, i. 69.
Lanchow, 81.
Lao, 72.
Laristan, 7.
Latakia, 39.
Lebanon, m. 39.
Leh, 57.
Lena, r. 13.
Levant, 36.
Lhasa, 85.
Linga, 43.
Lob Nor, l. 10.
Lombok Strait, 97.
Luang Prabang, 72.
Lucknow, 58-64.
Luni, r. 55.
Luzon, i. 100.

Macao, 86.
Macassar Strait, 97.
Madras, 48, 62.
Madura, 62.
Madura, i. 100.
Mæander, r. 35.
Mahanadi, r. 51.
Mahavillaganga, r. 69.
Maimachin, 84.
Makalla, 41.
Makri, 35.
Malabar Coast, 55.
Malacca, 71.
Malay Peninsula, 70.
Maldivs, i. 69.
Manar Gulf, 68.
Manasarowar, l. 85.
Manchuria, 83.
Mandalay, 63.
Mangalore, 61.
Manila, 100.
Manissa (Magnesia), 37.
Marmarice, 35.
Mashad, 44, 45.
Maulmein, 63.
Mecca, 41, 42.
Medina, 42.
Meerut, 58.
Me Kong, r. 19.
Me Nam, r. 19.
Mendere Chai (Mæander), r. 35.
Merv, 95.
Mesopotamia, 38.
Mesorea, 4.
Min, r. 80.

Mindanao, i. 97, 100.
Moluccas, i. 102.
Mongolia, 84.
Mosul, 38.
Muang-Tai = Siam, 70.
Mukden, 83.
Multan, 57.
Murghab, r. 96.
Muscat, 41.
Mysore, 61.

Nagasáki, 92.
Nagpur, 60.
Nanchang, 78.
Nanking, 83.
Nan-Shan, m. 73.
Narbada (or Nerbudda), r. 51.
Nazareth, 40.
Negapatam, 67.
Nejd, 41.
Nepal = Nipal, 33.
New Guinea (or Papua), 102.
Nicobar, i. 69.
Nicosia, 5.
Nihon (or Nippon) = Japan, 89.
Niigata, 90.
Nikko, 90.
Nineveh, 38.
Ningpo, 32.
Nipal, 33, 65.
Nonni, r. 84.

Ob, r. 12, 13, 94.
Ocean currents, 23, 90.
Okhotsk Sea, 31.
Olympus, m. 37.
Oman, 41, 42.
Orissa, 59.
Ormuz Strait, 6.
Orontes, r. 39.
Osăka, 91.
Ottoman Empire=Turkish Possessions, 34.
Oudh, 58.
Oxus, r. 17.

Padang, 101.
Pahang, 71.
Palembang, 101.
Pamirs, m. 9, 13.
Panay, 100.
Panjab = Punjab, 57.
Papua, or New Guinea, 102.
Pearl, or Canton, r. 80.
Pechíli, 77.
Pegu, 63.
Peiho, r., N. 77.
Peiho, r., S. 80.
Peking, 81.
Penang, 71.
Peradenia, 69.
Perak, 71.
Perim, i. 41.
Persia, 43.
Pescadores, i. 91.
Peshawar, 57.
Petropaulovski, 23.
Philippines, i. 97, 100.
Pnom-Penh, 72.
Pondicherri, 67.
Pontic Range, 35.
Poona, 62.
Port Arthur, 86.
Port Blair, 69.
Portuguese Possessions, 86, 101.
Poyang, l. 174.
Puma, r. 60.
Punjab, 57.

Quelpart, i. 87.
Quetta, 47.

Raipur, 60.
Rajputana, 57.
Raméswaram, i. 68.
Rangoon, 63, 64.
Ravi, r. 57.
Rawal-Pindi, 57.
Red Basin, 79.
Red Sea, 5, 6.
Russian Possessions, 32.

Saigon, 72.
Sakhalin, i. 89.
Sakkar, 67.
Salenga, r. 95.
Salt Range, 57.
Samar, 100.
Samara, 95.
Samarang, 101.
Samarcand, 96.
Samos, i. 35.
Sanaa, 40.
Sandakan, 100.
Sanpu = Brahmaputra, r. 51.
Sarawak, 100.
Satpuras, m. 49.
Sayan, m. 95.
Scutari, 38.
Sechwan, 79.
Seistan, 17.
Selangor, 71.
Selenga = Salenga, r. 95.
Sëoul, 87.
Shamo Desert, 10.
Shan Alin, m. 95.
Shanghai, 82.
Shankaikwan, 82.
Shansi, 77.
Shantung, 77.
Shasi, 79.
Shat-el-Arab, r. 38.
Shensi, 77.
Shikarpur, 67.
Shilka, r. 13.
Shillong, 59.
Shinano-gawa, r. 90.
Shiraz, 44.
Si-kiang, r. 80.
Siam, 70.
Siangtan, 81.
Siberia, 32, 94.
Sinai, 6, 10.
Sindh, 57.
Singan, 81.
Singapore, i. 71.
Singareni, r. 61.
Sinope, 35.
Sivas, 35.
Smyrna, 35.
Soerabaya, 101.
Soerakarta, 101.
Solo, r. 101.
Sonmiani, 45.
Srinagar, 56.

Stanovöi, m. 10.
Straits Settlement, 70.
Suchou, 81.
Suez Canal, 6.
Sulaiman, m. 48.
Sulu, i. 7.
Sumatra, 101.
Sumba, 102.
Sumbawa, 102.
Sumida-gawa, 91.
Sunda, i. 4, 97.
Sungari, r. 84.
Sungĕi Ujong, 71.
Surat, 66.
Sylhet, 59.
Symë, i. 35.
Syr-Daria, r. 17.
Syria, 34, 38.

Tabriz, 44.
Taiyüen, 82.
Taku, 76.
Talienwan, 86.
Tandjong Priok, 101.
Tanjore, 67.
Tapti, r. 49.
Tarim, r. 17.
Tarsus, 37.
Tashkent, 96.
Taurus, m. 35.
Tehran (or Teheran), 44.
Telok-betong, 101.
Tenasserim, 63.
Terek, r. 85.
Terek-davan Pass, 85.
Terek-ti Pass, 85.
Thai Bink, 71.
Tian Shan, m. 14, 84.
Tibet, 85.
Tientsin, 85.
Tiflis, 32.
Tigris, r. 19, 38.
Timor, i. 101.
Tjilatjap, 101.
Tobolsk, 96.
Tokaido, 91.
Tóky̆o, 91.
Tomsk, 96.
Tongking, 71.
Tonlé-Sap, l. 72.
Tourane, 71.
Trans-Caspian, 32, 94.
Travancore, 62.
Trebizond = Trapezus, 35.
Trichinopoli, 62.
Tríncomalí, 69.
Tsinan, 82.
Tsitsihar, 84.
Tundra, 24.
Tungting, l. 78.
Turkish Possessions, 34.
Turkistan, Eastern, 84.
Turkistan, Western, 32, 94.
Tuticorin, 7.

Uliasatai, 84.
Urals, m. 5.
Urga, 84.
Ussuri, r. 20.

Verkhoyansk, 22.
Victoria, 86.
Vindh-yas, m. 49.
Vladivostok, 96.

Wallace's Line, 97.
Weihaiwei, 86.
Wellesley, 71.
Wenchou, 80.
Western Ghats, 49.
Wuchang, 81.
Wuchou, 82.
Wusung, r. 82.

Yablonöi, m. 10.
Yangste-kiang, r. 19, 74.
Yarkand, 84.
Yatong, 85.
Yellow River=Hwang-ho, 20, 74.
Yellow Sea, 4.
Yemén, 42.
Yenisei, r. 12.
Yeniseisk, 22.
Yeshil Irmak, r. 36.
Yezo, i. 90.
Yokohama, 92.
Yunnan, 79

Zagros, m. 10.
Zarafshan, r. 96.
Zebu, 100.

INDEX OF CHIEF SUBJECTS.

Agriculture, 25-28, 36, 44, 53-55, 70, 71, 75, 89, 98-100.

Bamboo, 55, 70, 75, 91.

Cacao, 101.
Camels, 29-41.
Camphor, 91, 100.
Castor-oil, 45.
Cattle, 30, 55.
Cinchona, 55, 68.
Climate, 21-24, 36, 52, 74, 90, 95, 97, 98.
Coal, 31, 56, 71, 76, 90.
Coco-nut, 28-69.
Coffee, 41, 54, 55, 99.
Copper, 90.
Cotton, 28, 54, 75.
Currents (Oceanic), 23, 90.

Dates, 27, 38, 56.
Deserts, 11, 24, 26, 84.
Donkeys, 41.
Drugs, 81, 100.

Fauna, 7, 8, 29, 30, 76.
Fruit, 27, 28, 36, 39, 55.
Furs, 25, 95.

Goats, 30, 55, 85.
Gold, 31, 56, 95.

Harbours, 35, 38, 41, 46-48, 68, 71, 80-83, 91, 96, 100.
Hemp, 100.
Horses, 29, 30, 41, 44.

Indigo, 55.
Islands, 4, 68, 97.
Ivory, 95.

Jade, 85.
Jute, 54.

Kuro-Shiwo, 23, 90.

Lakes, 10, 12, 17, 73, 91, 95.
Leather, 30, 45, 65, 96.
Loess, 74.

Mango, 55.
Manufactures, 54, 64, 66, 75, 91.
Meat, 29, 30.
Milk, 29, 55.
Millet, 53.
Minerals, 31, 56, 68, 76, 90, 95.
Monsoons, 23, 24, 52, 75.
Mountains, 9-11, 13-16, 35, 39, 48-50, 73, 77, 84, 88.

Oil, 56, 59.
Opium, 54, 75, 79.

Palm, 27, 28, 38, 56, 71.
Pasture, 14, 26, 29, 30, 44, 55, 91.
Pearls, 7, 68, 102.
Pepper, 28, 71, 101.
Plains, 1, 12, 49, 74, 95.
Plateaus, 9-11, 23, 24, etc.
Political geography, 1, 5, 14, 20, 32-34.
Population, 28, 105.

Railways, 39, 47, 56, 64-67, 76, 90, 95.
Rainfall, 21, 23, 24, 28, 51, 52, 74, 90.
Rice, 27, 53, 63, 70, 75, 90.
Rivers, 1, 12, 16-20, 45, 50, 51, 73, 75, 94.
Roses, 44.

Sago, 100, 102.
Salt, 31, 56.
Sheep, 30, 55, 85.
Silk, 37, 60, 75, 91.
Spices, 28, 68, 71, 90, 102.
Steppes, 26.
Storms, 24, 89, 97.
Sugar, 28, 62, 75, 99.

Tea, 28, 54, 71, 75, 90.
Teak, 55, 63, 70, 71.
Timber, 25, 36, 39, 55, 94.
Tin, 31.
Tobacco, 28, 54, 77, 99-101.
Towns, 34, 37, 40, 44, 63-67, 80-83, 91, 96.
Tropics, 26.
Tundra, 18, 23, 25.

Volcanoes, 89, 97, 101.

Wheat, 36, 44, 54, 94.
Winds, 23, 24, 52, 74, 98.
Wool, 30, 36, 44, 55, 85.

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